







# EDUCATION OF THE SLOW-LEARNING CHILD

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## PREFACE

EVERY community faces the problem of the child who learns slowly in school. On this subject a committee of the White House Conference on Child Health and Protection in 1930 reported the following: "There are 450,000 pupils enrolled in the elementary grades who are mentally retarded to such a degree that they require special education to make the most of their possibilities" — and this number reported did not include the very many dull-normal who are unable to keep pace in school with normal children and complete each year's work successfully. The problem of providing proper educational opportunities for all these is a serious one. And the problem becomes increasingly serious as the compulsory age limit for school attendance is raised and such opportunities must be provided over a lengthened school period.

Gains in the numbers of so-called special, ungraded, and opportunity classes and in ability grouping of average, above-, and below-average pupils during the last two decades indicate that schools in increasing numbers are recognizing the importance of planning programs for the slow-learning child.

Recent trends in child psychology and educational philosophy provide a common basis for the education of children of all levels of ability, whether bright, normal, or slow. They reveal the basic principles and practices in an adequate program for the slow-learning child to be essentially the same as those for all children. As this common foundation for all educational method — understanding children and providing the best kind of environment for their all-round development — has become more and more generally recognized, education of the slow-learning child has been increasingly regarded

as an integral part of the general school program, demanding the same intelligent and scientific consideration as does the program for the normal child.

Emphasis throughout this book is given to those elemental principles that integrate the education of all the groups in the school population. Foremost among these principles are those that point to the need of understanding the whole child—his physical, mental, social, and emotional make-up; of utilizing child experience and activity as a basis for learning; of providing for the integration of home, school, and community life; and of developing a curriculum and methods so suited to the child's nature and needs that there will be continuous progress without failure throughout his school life. Specific application is made of these principles to the needs of the slow-learning child.

The characteristics and capacities of slow-learning children are described, their place in the school and community, and the procedures basic to planning and carrying out an adequate program for the welfare of individuals and community. Parts One and Two, which are given over to discussion of the most seriously handicapped—the “mentally retarded”—indicate how a differentiated program for this group may be made fruitful and functional in behavior outcomes. The facts presented refute clearly the premise so often accepted that the average child can “learn” but that the duller child cannot. The truth is demonstrated that a measure of educational growth is attainable for every child, and that such growth will come with the provision of vital learning experience that satisfies the child's needs and capacities at each successive stage of his development. For the slow-learning child this provision means not a reduced content of the regular school curriculum and repeated drill but an especially planned program.

The facts and principles that are applied in the first two parts of this book directly to the education of the more seriously retarded are also applicable to the education of that large group of "dull-normal" whose school program must also be given special consideration. In discussion of the more seriously retarded premises are developed and methods and curriculum content are outlined that will function with equal effectiveness for that large group of slow-learning whose handicaps are not so serious as to place them in the group requiring a special-class organization. Specific discussion of the needs of this group and of plans for meeting them is developed in Part Three.

It is hoped that the school administrator, the supervisor, and particularly the teacher who faces the problem of the slow-learning child in any sort of school organization may find in these pages practical help in the solving of their problem and also a stimulation to work for the development and the extension of adequate programs for all slow-learning children.

C. P. I.

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To Miss Elizabeth Long, psychologist of the Rochester Public Schools, I owe special mention for her careful reading and helpful criticism of the entire manuscript.

C. P. I.

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## INTRODUCTION

At a recent conference called by the United States Office of Education to consider the curricular needs of retarded children, insistent emphasis was placed upon the fact that the same general philosophy of education applies to all children, irrespective of the level of intellectual ability which each represents. The fundamental principle involved is that *each child shall be educated in keeping with his capacities, limitations, and interests, looking toward the happiest adjustment he can make in life and the most constructive contribution he can bring to society*. Such an adjustment and such a contribution are the secret of mental health and the essence of social efficiency. To bring them about is the goal of mental hygiene. Whatever the school can do to contribute to this goal contributes, therefore, to the mental health of its children and consequently to the mental health of society.

This is no new thought, nor is it peculiar to any particular office or to any particular conference. Educators everywhere are stressing the need of making provision for individual differences in learning power among the thirty million children who are attending our public and private schools today. Especially do those who are slow to learn force themselves upon the attention of their teachers because of inability to keep pace with their fellows. For them the ultimate objective is no different from that which pertains to other children, but its means of expression may be vastly changed. The *need* of social efficiency is common to all; the *elements* of social efficiency differ in detail for various groups. For some it will mean leadership, constructive planning in the affairs of the state and nation, achievement to a marked degree in music, in art, in



business, in the professions, in social service. For others it will mean only an ability to get along with one's neighbor, to be at least partially self-supporting, to maintain a home, to keep physically fit, and to participate happily in the life and privileges of the community reduced to their simplest terms. Upon the clarification of this concept of social efficiency as it applies to the slow-learning will therefore depend our course in adapting the curriculum to their individual requirements.

Ten years ago much was written about the "project" and the "project method" in education. Since that time we have watched the "project" grow into an "activity unit" that involved more extensive participation on the part of the pupil and closer co-ordination of all the activities of the classroom about a central theme of interest. And now even the "activity unit" is beginning to lose caste unless it in turn has become an "experience unit," arising out of the environment and interests of the child himself. The words "experience" and "experiment" are closely allied, both being derived from the Latin *experio* — I try. An "experience" is accordingly something that I have tried for myself and that grows out of my own surroundings and activities. For the child an experience is likewise some aspect of living. It is an integral part of life *as he knows it*.

Efficiency in living can come only through such experiences in living. The child must try himself out in any given situation in order to acquaint himself with the content of the experience and with any issues that demand decision or adjustment on his part. Because of the limited horizon of the slow-learning pupil he must have more experiences of the same kind than the normal child in order to arrive at a given stage of efficiency. He is a child of habit, not of reason; a child of doing, but not of thinking. Hence he must be

given the opportunity of meeting over and over again the types of experience to which he is expected to make adjustment in his daily life. This is the only way in which he can be helped to become a socially efficient individual in a social community.

It is fitting that, in the state in which so much of the early pioneer work was done for the education of mentally retarded children, a book should now be written that so clearly crystallizes the lessons we have learned through the years. The program of provision for individual differences in the city of Rochester, New York, has made strides of which one may well be proud. Those who have been responsible for its development have had deep insight into its problems and a rare vision of its possibilities. Miss Ingram, a Supervisor in the Department of Child Study and Special Education, has been intimately connected with the growth of the whole program as it pertains to the education of retarded children. She knows whereof she speaks, and makes available in this volume material that will be of great value to all who would render effective service with slow-learning pupils. She analyzes the concept of social efficiency as it pertains to these children and examines the goals we should set before us. Then she gives specific suggestions to help us achieve our end. She tells us that "learning will occur largely through concrete experiences related to real life." Hence she emphasizes the importance of the "experience unit" and describes units that may be adapted by any teacher.

Any curriculum that is intelligently planned is based upon a knowledge of the nature and needs of the child. The author has not overlooked this essential factor. She states clearly the basic principles underlying the physical and mental development of retarded children. She discusses their motor abilities and their social traits.

All of these she exemplifies with illuminating descriptions of individual children, which will be invaluable to the teacher who appreciates the need of studying individually each pupil in his class.

It is gratifying to know that the application of these principles of curriculum adjustment to the needs of the slow-learning is not dependent upon any specific type of school or class organization. Wherever the slow-learning child is found, whatever degree of retardation he represents, his needs can be met through the efforts of teacher, supervisor, and administrator. Regular classroom teachers count many slow-learning children among their pupils. So-called "special" classes are devoted to them. Some schools are separately organized for them. Whether the teacher's concern be one lone slow-learning pupil in a regular class or sixteen to twenty such pupils in a special class, the principles to be followed are the same. In every case there must be sympathetic individual work for individuals, based upon a knowledge of psychological facts, pupil needs, and instructional methods. All of these are treated extensively and intelligently by the author.

Supervisors and administrators too will find here many valuable suggestions for the organization of a program within a school or school system designed to meet the needs of slow-learning pupils.

From all sides the call has come for practical aids and guidance in the education of the slow-learning. In the teacher-training institutions of the country there is a continuous search for material that will be of help to prospective teachers. To all who are or who expect to be engaged in the great task of fitting the school to the child, Miss Ingram's book offers authoritative information and illuminating counsel.

ELISE H. MARTENS

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## PART ONE

### THE MENTALLY RETARDED CHILD A DESCRIPTION OF HIS NATURE AND HIS NEEDS

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# *Chapter One*

## INTRODUCTORY

THERE is today definite agreement that there are a number of pupils in any unselected school population who cannot profit by the organization and curriculum of the average public school. For them special provision must be made if our schools are to provide for their fullest development. Outstanding among those who need such special provision are the children who are retarded to some degree in their mental development. These are generally designated mentally handicapped, or slow-learning. Consideration of the needs and abilities of this slow-learning group and the application to them of suitable educational practices will be the purpose of this book.

Each slow-learning child according to the degree of his handicap presents an educational challenge. He must be studied individually and his needs provided for in a carefully planned educational program. There are, however, certain general principles on which such study and planning should be based. These are discussed in the following chapters, with special application first to the more seriously and then to the less seriously retarded of the slow-learning group. For convenience in discussion, the term "mentally retarded" will be used to designate the more seriously handicapped — those for whom many educational systems have now set up well-organized programs of special classes. The term "dull-normal" will be applied to the larger number of the slow-learning who are less seriously handicapped than the mentally retarded but who are unable to make normal school

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progress year by year. This rough classification of the slow-learning into two groups should not imply any hard and fast line of demarcation between the two groups or between the dull-normal and the normal but is used rather to suggest the existence of different degrees of learning capacity for which educational provision must be made.

Whether slow-learning children are placed in special classes or are cared for in the regular grades of the school, they must be recognized as a special educational problem. It is not enough to reduce the content of the regular school curriculum to meet their limited capacities or to provide extra learning time for them. Education for these children must be specifically planned to help them develop those elementary skills, attitudes, and appreciations which are fundamental to the achievement of satisfactory social and economic adjustments in everyday life.

The average child incidentally and without conscious effort learns many of those things on which satisfactory adjustments to life depend. A school program for the slow-learning must often teach these things specifically. It must also be so suited to the capacities and needs of these children that they will experience success in their school work and so come to realize the resultant sense of confidence and security that is so essential to the wholesome development of personality.

A sound understanding of the capacities of these children and of the problems they will meet is essential to the development of any program that provides for the optimum growth of the slow-learning child, whether he is definitely mentally retarded or only dull-normal, whether he will be cared for in a special class or in the regular grade classroom.

## THE MENTALLY RETARDED

About 2 per cent of the school population have definite mental limitations so extreme that their failure to succeed in school with normal children is conspicuous. These children require a special program of mental, social, and emotional education if they are to become wholly or even partially self-supporting. For the recognition and education of such children sixteen state legislatures throughout the United States have made special provision, and many communities in states not having such laws are carrying on well-organized special programs.

Various state laws describe the mentally retarded as follows: "Children over four and under sixteen who have a mental handicap"<sup>1</sup>; "children three years or more retarded in mental development"<sup>2</sup>; "mentally subnormal"<sup>3</sup>; "children gravely retarded in mental condition."<sup>4</sup> Such statements are generally representative of those appearing in laws designed to provide a specialized school program for children whose mental retardation is great enough to interfere seriously with normal school progress.

An examination of the pupil personnel in special classes for the mentally retarded in twenty-five representative cities of a hundred thousand population and over shows that these groups for the most part are made up of children whose intelligence quotients fall between 50 and 75.<sup>5</sup> The mental age at entrance to such classes is for the most part six years or below. Ten years is the usual upper limit of mental age.

<sup>1</sup> Connecticut Public Acts (1920-1921), Chapter 355, page 3379.

<sup>2</sup> Massachusetts General Laws Relating to Education (1921), page 41.

<sup>3</sup> Minnesota Laws Relating to Public School System (1923), page 57.

<sup>4</sup> Pennsylvania School Laws (1921), pages 101-103.

<sup>5</sup> *Special Education in the United States*, Report of the Child Study Club (Board of Education, Rochester, New York; 1928).



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The term "mentally retarded" will be generally applied in this book to children with intelligence quotients ranging from 50 to 75 and with mental ages ranging from five to ten years,<sup>1</sup> since these are the most seriously handicapped for whom the public school must make some provision. These pupils at fifteen and sixteen years of age will not have succeeded beyond minimum third-, fourth-, or fifth-grade standards when measured in terms of grade achievement.

In addition to the criteria of slow mental development and inferior educational achievement, persons of the mental levels indicated are for the most part unable to meet adequately the normal social demands of their age groups. In social traits that are generally accepted as correlates of intelligence — such as leadership, adaptability, and dependability — they respond inadequately. In social situations that call for planning, practical judgment, and common sense, they rate below average. As adults the majority will be found in the below-average group of unskilled and semi-skilled workers able for the most part to adjust industrially and socially only at that lower level. There will be a minority who cannot function independently.<sup>2</sup>

<sup>1</sup> The mental age indicates the level of mental development that the child has reached at a given time. The intelligence quotient (I Q.), which is the ratio of mental age to chronological age, is an index of relative brightness. The twelve-year-old of twelve years mental age has an intelligence quotient of  $\frac{12}{12}$ , or 100; the twelve-year-old of nine years mental age has an intelligence quotient of  $\frac{9}{12}$ , or 75. Theoretically, in an unselected school population, there is the following distribution of I Q.'s: 2 per cent below 73; 6 per cent from 74 to 79; 12 per cent from 80 to 89; 60 per cent from 90 to 109; 12 per cent from 110 to 119; 6 per cent from 120 to 127; 2 per cent 128 and above. See also L. M. Terman, *Intelligence of School Children*, pages 7-8 (Houghton Mifflin Company, Boston; 1916).

<sup>2</sup> See Chapter IV, pages 50-58. Follow-up studies of former special-class pupils indicate that mental retardation and accompanying inadequacy for school success are not necessarily synonymous with the earlier accepted criterion of social-economic inadequacy in later life.

## THE BORDERLINE AND DULL-NORMAL

In addition to those pupils who are seriously retarded there are about 15 to 18 per cent of the school population who are unable to progress normally year by year and are consequently retarded in their school progress, although to a less serious degree than are the "mentally retarded." Measured by an intelligence test they would range approximately from 75 to 89 I.Q. For the purpose of convenience in reference, this group will be designated as dull-normal. In school systems that make no special provision for these pupils — by a slow-moving organization, slow sections, or an adapted curriculum — the dull-normal who is retarded in his progress from grade to grade often becomes a disciplinary problem and is then placed with the mentally retarded group. This treatment is unfair to him, as his potential capacity is greater than that of a mentally retarded child. During his school life and in adult life he is capable of more adequate adjustments than the mentally retarded child. As an increasing number of progressive school systems recognize the dull-normal and provide suitable programs for them, increasingly fewer of them will be either included in classes for the mentally retarded or left to become discipline problems in the regular grade organization.

FACTORS OTHER THAN INTELLIGENCE THAT DEFINE  
BOTH GROUPS OF SLOW-LEARNING

It is not easy to define either the mentally retarded or the dull-normal by means of a definite point in mental age or intelligence quotient because, although intelligence is the most important single factor in learning, there are other important factors. Physical

development and condition of health, school attendance, school history, parents' attitudes, home conditions, temperament, and disposition are all operative. There is scarcely any doubt but that all children with intelligence quotients of 70 or below are so seriously below the level of the normal child that they may be considered mentally retarded and may require a specialized program designed for the lowest 2 per cent in learning ability, but conditions other than intelligence may be the deciding factor in the case of children with I.Q.'s above 70. There are many pupils, for example, with intelligence quotients between 70 and 80 who can succeed fairly well in academic work in an ungraded group, a slow-moving grade, in a slow section of a regular grade, or in a small grade group where the academic work is individualized. These are the pupils with borderline intelligence whose progress has been aided by such favorable factors as a steady, persistent disposition, good home environment, an adjusted school program, a history of regular school attendance, an understanding parent and teacher, or normal physical development and good physical condition. A pupil with an intelligence quotient falling between 70 and 80, on the other hand, may need a specialized program planned for the mentally retarded because of the operation of such deterring factors as immature physical development, sensory defects, emotional instability, irregular school attendance, repeated habit of failure in the grades, or an extremely adverse home environment. In each instance all factors must be considered and the diagnosis and assignment for an educational program must be based on the individual merits of the case.

An educational plan for either group must then be predicated on the fact that the rate of mental develop-

ment for all these children is slow, that their learning capacity is more limited than that of the average group for whom the content and method of the regular grade curriculum is planned, and that they have special and specific educational needs.

The principles underlying the education of all children are, however, fundamentally the same. But the slower the learner the greater the need for special adaptations in their application. Such special adaptations of principle and method to the needs and abilities of the slow-learning are therefore discussed in detail in the following pages for only the most seriously retarded of this group. Through study of them conditions are revealed and principles suggested that may easily be adapted to less extreme cases. The teacher who understands the needs and capacities of the slowest child in her group and can devise an educational program suitable to these capacities and needs will be well qualified to provide for the less seriously retarded. These slowest pupils are moreover the ones least able to get any benefit from the regular school methods and curriculum. For them special provision is obviously imperative.

The major part of the book — Parts One and Two — is accordingly given over to discussion of the characteristics, the capacities, and the needs of the mentally retarded child. The facts and principles developed there are easily transferable to consideration of the dull-normal. Part Three accordingly only briefly indicates how they may be applied to educational methods and practices specifically designed to encourage the optimum development of the less seriously handicapped of the slow-learning.

## Chapter Two

### A DESCRIPTION OF THE MENTALLY RETARDED CHILD

EDUCATION today emphasizes the development of the total personality of the growing child and the need to consider the several aspects of growth that are present in the child at any one time. In describing the normal child from this point of view, Bird T. Baldwin speaks of "five parallel and interrelated ages: (1) a *chronological age* in years, months, and days, denotive of the temporal span of life . . .; (2) a *physiological age* denotive of the stages of physical growth and stages of physical maturity — this is the basic age; (3) a *mental age* denotive of the growth of certain mental traits, capacities, interests, and abilities; (4) a *social age* or a *religious age* . . . denotive of the growth of social attitudes and the ability to make, adapt, and control social adjustments; (5) a *composite educational age* denotive of the rate and position in school progress."<sup>1</sup> This descriptive statement, made when attention was first being directed to the educational significance of all aspects of child behavior and when great emphasis was being given to quantitative measurement, brings into relief the several aspects of the growth of the slow-learning child that are to be used here as the basis for discussion of his development.

Of the five "ages" mentioned, only the chronological age is always definitely ascertainable. It represents

<sup>1</sup> Bird T. Baldwin, "Methods of Selecting Superior or Gifted Children," *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I, page 36 (Public School Publishing Company, Bloomington, Illinois; 1924). Quoted by permission of the Society.

merely the span of time during which the individual has lived. The other four ages suggest stages of development through which the child passes. They are dependent on his inheritance as a biological organism and on his environment. The individual organism is growing physically, mentally, and socially as it reacts to its environment, and is acquiring certain skills, habits, and attitudes. The assumption is that the normal child shows development in these four respects from month to month and from year to year at a normal rate that can be observed or measured,<sup>1</sup> and that progress in one line of development keeps pace with progress in another. At a given chronological age, as a certain stage of physical maturity is reached, the development of certain mental and social traits and of certain educational achievements may be expected. For instance, the average child of six years chronological age may be expected to be about forty-four inches in height and forty-two pounds in weight, to show large-muscle co-ordination, to enjoy the element of imaginative play, to play co-operatively

<sup>1</sup> Teachers generally are familiar with the measurement of mental and educational development by standardized tests, and with the use of mental age and educational age as indications of this development — mental age measured by individual tests (such as the Stanford or other revisions of the Binet scale) or by group intelligence tests, educational age measured by such tests as the New Stanford Achievement Test or the Metropolitan Achievement Tests. The measurement of physiological and of social age still lies in the realm of experimentation and study. Nursery school groups and child guidance clinics are contributing to these fields. The present tendency is toward individual objective and descriptive studies of personality, using accepted quantitative measures as an aid in such studies.

See Paul Furfey, *The Growing Boy*, pages 1-32 (The Macmillan Company, New York; 1930). The subject of this book is "the progressively increasing maturity of behavior," which the author describes as "developmental age."

See also Paul Furfey, *Tests for Developmental Age* (C. H. Stoelting Company, Chicago; 1931).

with other children, to enjoy making things, to know what is expected of him in home and school, to enjoy songs and stories, and to be interested and mentally ready to learn to read. Studies have proved that for the large majority of the normal group there are such expected rates of physical, mental, and social progress, although there are, of course, individual differences in respect to development in these several aspects even in the normal group.

The interrelationships of these various ages or stages of development — physical, mental, educational, and social — are especially significant in the mentally retarded child because he is not developing relatively in these four respects as the normal child is.

#### PHYSICAL DEVELOPMENT

In respect to physical development and physical traits the mentally retarded closely resemble groups of normal children of corresponding chronological ages. Comparisons of physical measurements of groups of gifted, average, and slow-learning children selected on the basis of intelligence test ratings indicate differences in the averages for the respective groups but considerable overlapping. The facts in Table I reported by Hollingworth and Taylor<sup>1</sup> show such differences and overlapping.<sup>2</sup>

<sup>1</sup> L. S. Hollingworth and G. Taylor, "Size and Strength of Children Who Test above 135 I.Q.," *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I, page 227 (Public School Publishing Company, Bloomington, Illinois; 1924). Quoted by permission of the Society.

<sup>2</sup> See also L. R. Wheeler, "A Comparative Study of the Physical Growth of Dull Children," *Journal of Educational Research*, Vol. XX, No. 4, pages 273-282 (November 1929). The physical growth of a group of dull children (70 to 90 I.Q.) over a period of six years is compared with like measures of growth in a group of normal children. The differences for the group were found to be comparatively small, but fairly consistent differences greater than chance appear in children of from six to eleven years.

The differences between the medians for the normal and the mentally retarded group, 1.6 inches and 4.4 pounds respectively, are not great considering that the latter group are of low I.Q. — all below 65 and with a median of 43. The amount of overlapping also indicates that some will reach or exceed the normal in even an institutional group, as that reported was, where serious factors of personal history have determined the selection. When public-school groups

TABLE I

MEDIAN AND OVERLAPPING UPON MEDIAN FOR PHYSICAL MEASUREMENTS  
OF THREE GROUPS OF FORTY-FIVE CHILDREN EACH, SELECTED RESPECTIVELY AS GIFTED, NORMAL, AND MENTALLY RETARDED ACCORDING  
TO I.Q., WITH AGE, RACE, AND SEX CONSTANT

	I Q	AGE	HEIGHT	WEIGHT	HEIGHT- WEIGHT COEFFI- CIENT
		(in months)	(in inches)	(in pounds)	
Medians for					
Group A — I Q 's over 135	151	117	52 9	74 0	1 31
Group B — I Q 's 90 to 110	100	117	51 2	63 9	1 19
Group C — I Q 's below 65	43	116	49 6	59 5	1 14
Per cent of Group B that reach or exceed median of Group A . . .		58	20	18	24
Per cent of Group C that reach or exceed median of Group A . . .		45	18	9	16
Per cent of Group C that reach or exceed median of Group B . . .		45	28	36	36

are measured, closer approximation is evident. Table II, showing the height and weight of a random selection of mentally retarded school children at four age levels, indicates how like the normal they are in measurements of height and weight.



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TABLE II

HEIGHT AND WEIGHT OF TWENTY MENTALLY RETARDED CHILDREN SELECTED AT RANDOM FROM EACH OF FOUR AGE GROUPS—9, 11, 13, AND 15 YEARS

CHRONOLOGICAL AGE	SEX	I Q.	HEIGHT (IN INCHES)			WEIGHT (IN POUNDS)		
			AVERAGE <sup>1</sup> AT AGE LEVEL	ACTUAL HEIGHT OF INDIVIDUAL	INDIVIDUAL DEVIATION FROM AVERAGE	AVERAGE <sup>1</sup> AT AGE AND HEIGHT LEVEL	ACTUAL WEIGHT OF INDIVIDUAL	INDIVIDUAL DEVIATION FROM AVERAGE
9-0	G	75	52	53	+ 1	67	74.75	+ 7.75
	G	72		52	0	64	58.25	- 5.75
	B	73		51.75	- .25	64	64	0
	B	69		50.75	- 1.25	61	53	- 8
	G	74		49	- 3	55	55.25	+ .25
11-0	B	69	56	56.75	+ .75	81	82	+ 1
	B	73		56	0	77	81	+ 4
	G	74		55.5	- .5	75	67	- 8
	G	65		54.25	- 1.75	70	70	0
	B	66		51.5	- 4.5	62	68	+ 6
13-0	B	74	60	62.5	+ 2.5	104	108	+ 4
	B	64		60.5	+ .5	95	96.5	+ 1.5
	B	71		60	0	93	95.5	+ 2.5
	B	73		59.5	- .5	91	91.5	+ .5
	B	70		56	- 4	78	78	0
15-0	G	67	63	65.5	+ 2.5	123	120	- 3
	G	71		63.75	+ .75	118	129.25	+ 11.25
	G	64		60	- 3	105	106	+ 1
	G	70		59	- 4	100	101	+ 1
	G	57		58	- 5	96	111.5	+ 15.5

<sup>1</sup> Height and weight averages are taken from tables by Baldwin and Wood in Thomas D. Wood and Hugh Grant Rowell's *Health Supervision and Medical Inspection of Schools*, pages 82 and 83 (W. B. Saunders Company, Philadelphia; 1927).

## MOTOR ABILITY

Early measurements of motor abilities showed that although the mentally retarded were inferior on the

TABLE III

AVERAGES OF STANFORD-BINET MENTAL AGES AND CORNELL-COXE PERFORMANCE AGES FOR 329 PUPILS RANGING FROM 9 TO 15 YEARS IN CHRONOLOGICAL AGE AND FROM 50 TO 90 IN I.Q. AS DETERMINED BY PERFORMANCE ON THE STANFORD-BINET TEST

CHRONOLOGICAL AGE RANGE	IQ LEVEL 50-59					IQ LEVEL 60-69					IQ LEVEL 70-79					IQ LEVEL 80-90				
	NUM-BER OF CASES	CA	IQ	MA	PA	NUM-BER OF CASES	CA	IQ	MA	PA	NUM-BER OF CASES	CA	IQ	MA	PA	NUM-BER OF CASES	CA	IQ	MA	PA
9-0 to 9-11		9-3	56	5-3	6-2	10	9-5	65	6-2	7-2	21	9-7	74	7-2	8-10	14	9-6	88	8-3	8-11
10-0 to 10-11	7	10-3	55	5-9	7-2	18	10-7	65	6-10	8-2	25	10-4	73	7-7	8-11	13	10-5	86	8-11	9-0
11-0 to 11-11	9	11-5	55	6-4	7-2	30	11-4	65	7-5	8-8	22	11-6	75	8-8	9-6	13	11-5	86	9-9	10-2
12-0 to 12-11	9	12-5	56	6-11	8-1	21	12-7	66	8-2	9-4	22	12-6	74	9-4	10-5	4	12-5	85	10-8	12-3
13-0 to 13-11	12	13-5	55	7-5	7-9	24	13-5	65	8-7	9-8	11	13-7	74	10-2	10-9					
14-0 to 14-11	15	14-6	54	8-0	9-9	16	14-6	63	9-3	10-9	8	14-6	73	10-6	11-5					

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average, they approach much nearer the norms in motor performance than in intellectual ability or abstract thinking.<sup>1</sup>

Tables III and IV give the results of examinations on the Stanford-Binet Scale and the Cornell-Coxe Performance Ability Scale for 329 pupils who were studied with a view to possible special-class placement.<sup>2</sup> Although the numbers are not large at any one level, test returns consistently showed, at all ages and I.Q. levels, better performance on the average in tasks calling for motor co-ordination, motor control, and ability to deal with the concrete than in ones involving more intellectual processes.

TABLE IV

NUMBER OF MONTHS BY WHICH AVERAGE OF CORNELL-COXE PERFORMANCE AGES EXCEEDS AVERAGE OF STANFORD-BINET MENTAL AGES AT VARIOUS CHRONOLOGICAL AGES AND I.Q. LEVELS FOR 329 PUPILS

AGE LEVEL	I Q LEVEL 50-59		I Q LEVEL 60-69		I Q LEVEL 70-79		I Q LEVEL 80-90	
	NUMBER OF CASES	MONTHS DIFFER- ENCE BETWEEN RESULTS	NUMBER OF CASES	MONTHS DIFFER- ENCE BETWEEN RESULTS	NUMBER OF CASES	MONTHS DIFFER- ENCE BETWEEN RESULTS	NUMBER OF CASES	MONTHS DIFFER- ENCE BETWEEN RESULTS
9	5	11	10	12	21	20	14	8
10	7	17	18	16	25	12	13	1
11	9	10	30	14	22	10	13	5
12	9	14	21	14	22	12	4	19
13	12	4	24	13	11	7		
14	15	21	16	16	8	11		
Total	57		119		109		44	

<sup>1</sup> See L. A. Hollingworth, *Psychology of Subnormal Children*, pages 112-115 (The Macmillan Company, New York; 1920).

<sup>2</sup> Data taken from the files of the Educational Research Division of the New York State Education Department, Albany, New York

# MENTAL DEVELOPMENT

Table V indicates the slow growth in mental ability typical of the mentally retarded, and shows that within the group there are varying rates of growth according to intelligence quotient level. The typical retarded child of 70 I.Q., for example, reaches a mental development at thirteen years that is not approximated by the child of 50 I.Q. until he is fifteen years old.

Mental age and I.Q. suggest the limitations of the retarded child's abilities of association, comparison, comprehension, generalization, and symbolization compared with those of the normal child. For example, in school tasks calling for association, comprehension, and judgment—such as getting meaning from the printed page, adding new words to his vocabulary, and solving problems in number—the mentally retarded child who is chronologically twelve years old and mentally eight and a half years, with an I.Q. of 70, will respond more as the normal eight-year-old child rather than as the normal child of his own

TABLE V

MENTAL AGES GENERALLY TYPICAL OF MENTALLY RETARDED CHILDREN OF VARIOUS CHRONOLOGICAL AGES AND I.Q. LEVELS

CHRONOLOGICAL AGE IN YEARS AND MONTHS	MENTAL AGE IN YEARS AND MONTHS		
	I Q 50	I Q 60	I Q 70
8-0	4-0	4-10	5-7
9-0	4-6	5-5	6-4
10-0	5-0	6-0	7-0
11-0	5-6	6-7	7-8
12-0	6-0	7-2	8-5
13-0	6-6	7-9	9-1
14-0	7-2	8-4	9-9
15-0	7-6	8-11	10-5

chronological age would. This principle holds true at all ages, although among the higher age groups long life experience and other favorable conditions may aid some individuals in succeeding somewhat better than their mental ages would suggest.

#### SOCIAL DEVELOPMENT

The social development of the mentally retarded child is largely dependent on his mental and physical development. His physical size and physical abilities create a need and a desire for many of those experiences of the normal child of the same chronological age and physical growth. But his slower mental development tends to limit his capacity to understand and to participate in the experiences of his chronological-age group. Because the mentally retarded child has less ability to learn from experience, to take in all the elements in a complex situation, to foresee consequences, and to form judgments than has the normal child, he is less capable of making adequate social adjustments. He is living, however, in a social environment that puts him in touch repeatedly with social experiences. Thus he may be helped to make some of the simple social adjustments of his age group through directed habituation. His physical development — size, endurance, and motor co-ordination — and his desire to be like others are an aid in bringing about a social development that is as consistent with his physical development as possible.

In considering the education of the mentally retarded, it is necessary to take into consideration these several aspects of growth and the degree of their maturity at different chronological ages. The following descriptions present a picture of the child physically, socially,

and mentally at the different chronological-age levels from eight through fifteen years. It is difficult, however, to generalize from individual cases to give a satisfactory picture of a typical mentally retarded child, as every mentally retarded child is an individual and must be studied and provided for as such. So many hereditary and environmental influences are operative that no two children of any age are alike, and individual variations and combinations of traits increase the further we go from the average. But there are certain generalizations and common traits that may be noted at different chronological-age levels and that may serve as a guide and a challenge to the further study and education of this group. These generalizations and descriptions of the common traits are presented for the three age groups 8 to 10 years, 11 to 12 years, and 13 to 15 years.

# DESCRIPTION OF CERTAIN PHYSICAL, SOCIAL, AND MENTAL TRAITS OF THE MENTALLY RETARDED AT DIFFERENT AGE LEVELS

## 8, 9, AND 10 YEARS

### PHYSICAL TRAITS

Height and weight for the majority approximate normal standards for their approximate ages — 50 inches, 58 pounds, for the eight-year-old; 52 inches, 64 pounds, for the nine-year-old; 54 inches, 70 pounds, for the ten-year-old.

Muscular control of limbs is well developed. Walking, skipping, running, and jumping are done with ease, except in occasional cases of especially inferior co-ordination. Muscular control of hands tested in baseball throwing and catch at distance, bean-bag toss for accuracy, and standing broad jump are slightly inferior to the norm for children of average ability.

Muscular control of fine muscles of hands and arms is fairly well developed. Chalk, pencil, crayon, and brush are used with neatness and considerable precision. Paper cutting, hammering, and

### SOCIAL TRAITS

Period of individualization is past and transition to social group has been made to the extent that the child has more or less learned to expect certain reactions from persons and things around him, and realizes that certain things are in turn expected of him. Co-operation in personal cleanliness, the use of expressions of courtesy, and the exercise of some self-control in satisfying wants are developed. Attempts to win approval of adults and satisfaction of desires dominate conduct.

Suggestion and imitation dominate in conduct and play. Running games with "choice" element such as tag; singing games like "The Farmer in the Dell," "The Mulberry Bush"; seasonal games like marbles, jackstones, and spinning tops; and ball playing, are enjoyed. The ego is too dominant to allow for being a "good sport" in play.

### MENTAL TRAITS

Mental development approximates that of normal children five to seven years of age. Situations such as playing games, making toys, and listening to stories are of interest to the more retarded. Gradually, from the mental age of six years on, activities like reading and writing, calling for periods of voluntary attention, will be undertaken. Rote memory is good at all three age levels, but memory of images and logical memory are poor. Concepts of time are weak. The names of the days of the week and the date can be named because they are read daily. The idea of months is very vague. Hours on the clock are associated with daily routine by a majority of nine- and ten-year-olds — "9 o'clock, school begins," "12 o'clock, lunch time," etc.

At eight years weakness of power of association, fundamental to language

sawing are carried on, but construction in woodwork is likely to be crude.

Senses are well developed. Variation from the normal results from a lessened capacity for discriminating and interpreting sensations. Failure to carry out directions is due to lack of comprehension rather than to lack of auditory acuity.

Speech defects such as stammering, lisping, and infantile speech are found in about 12 to 13 per cent of the children<sup>1</sup> as compared with 2 or 3 per cent of regular grade groups.

Make-believe play must involve elements that have become very familiar through actual experience or pictures, such as playing school, house, policeman, aviator, Indian, and the like.

Stories to be successfully dramatized must be familiar. Satisfaction is obtained from much repetition of stories, plays, and games. Rhythm, music, folk dances, and mimetics set to music are enjoyed, as well as picture books, fairy stories, animal stories, and descriptions of child life. The distinction between true and imaginative stories is appreciated. Independence of appreciation of humorous situations is lacking; an explanation is necessary even for the "funnies."

Play interests of group of twelve ten-year-olds in order of preference were tag games, hide-and-seek, ball games, playing catch, checkers, lotto, playing house, playing school, playing with dolls, playing with pet kitten, picture puzzles, jumping rope, spinning tops,

development, is noticeable. Differences and similarities between two common objects, like stone and egg or wood and glass, are not readily noted. The power to call up ideational representation of objects may be weak or there may be an inability to recognize any associations between the two. At ten years more ability to associate is evident, but development continues to be consistently slow.

Mere activity and manipulation satisfy at these ages, so that there is little stimulation to think and to talk about pursuits. Expression in play or conversation is less than that of the normal child. Estimated vocabulary is 25 to 35 per cent below the eight-year-old standard. Objects are defined in terms of use, as "a fork is to eat with," "a doll is to play with." Little description or classification of objects is in evidence. There is a lack of awareness of qualities and characteristics that are of interest to normal eight-year-olds.

<sup>1</sup> Based on average per cents found in Rochester special classes over a period of three years. Includes incapable children placed for observation.



## 8, 9, AND 10 YEARS (*Cont.*)

### PHYSICAL TRAITS

### SOCIAL TRAITS

### MENTAL TRAITS

Flying kites, marbles, table games such as spinning for turn and matching cards.

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Picture description is largely a naming of objects or of action. Spontaneous drawings show few relationships and a lack of detail.

Little ability for self-criticism is evident. Any response tends to satisfy until some basis for and help in judging effort are provided.

New things in the environment are not readily observed without direction.

Lack of adaptation in a new situation seems due to failure to recognize similarities and to make associations.

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## 11 AND 12 YEARS

Height and weight for the majority approximate normal standards for the respective ages — 56 inches, 77 pounds, for the eleven-year-old; 58 inches, 85 pounds, for the twelve-year-old. Tendency to acceleration in height is similar to that of normal children, with girls slightly in excess of boys. Increase in bone growth is noticeable in legs and arms, making a change in

Children of similar mental ability and of the same sex are preferred as companions. Individual interests and personal concern dominate activity, although sensitivity to group approval as well as to adult approval is developing, with obedience a fairly well-formed habit. The fact that others must be considered is recognized in more and more situations.

Range of mental development approximates that of normal children seven to nine years of age. Ability to counteract distraction and to give voluntary attention to a task is increasing. Greater effort is used to overcome difficulties. Rote memory is good but memory of images and logical memory continue to be poor. The concept of time is developing. By twelve years

relation of sitting to standing height that is also similar to the development in normal children. A few of the taller girls may begin to show at the twelfth year awkwardness of movements and the beginnings of adolescent development.

General motor control is good, except in extreme cases of mental defect or physical disability. Eye and hand coordination tend to increase — manual skills are carried out with less inaccuracy and bungling. Greater attention to and interest in ways of doing things and the finished product are shown. Creditable results can be obtained from manipulation of tools and material.

Speech defects tend to persist longer than in normal children, despite remedial instruction.

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Power to sacrifice immediate for remote ends is increasing. There is greater responsibility for personal care, for simple home duties, for materials and property. Sense of individual and co-operative ownership is growing.

Growing interest is shown in constructing and in using things — doll clothes, doll furniture, autos, trucks, boats, and airplanes being greatly enjoyed. Care of and responsibility for younger children are especially pleasing to the girls.

Play is usually with others in some form of game. Many of the play materials noted at earlier years continue. Element of competition is especially strong in boys — “starring” in contests, running the fastest, jumping the farthest, winning the most marbles, etc. Games of chance, such as card games and table games, guessing games, games of memory, and ball games of all kinds are enjoyed. Interest in make-believe play drops off. Enjoyment of the dramatization of a familiar story con-

the majority can tell time and they know the meaning of minutes and hours. Some ideas of the passing of time in months and years have been acquired, but the idea of actual months and associations with seasons are still vague.

Ability to recognize differences and similarities in common objects and to associate ideas is increasing. Ability to use language continues to develop slowly. Developing concepts and ideas result in increase of meaning in activities undertaken. There is more concern about what is being done and why. Mere manipulation and activity do not so readily satisfy. There is more expression in play and conversation. Objects are thought of in terms of definition and classification; a soldier is a “man who goes to war,” etc. Vocabulary would probably be about 3600 to 4000 words, contrasting with 7200 for the normal child.

Pictures are responded to in terms of simple description of objects and action without interpretation of meaning.

## 11 AND 12 YEARS (*Cont.*)

### PHYSICAL TRAITS

#### SOCIAL TRAITS

tinues, as well as enjoyment of familiar plays repeated over and over. Variety is not self-initiated but has to be developed through an outside stimulus.

Fairy stories and stories of animals and of child life are still enjoyed. Boys begin to ask for adventure stories. "Funnies" are enjoyed and are more intelligently appreciated than at an earlier age.

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#### MENTAL TRAITS

Drawings show more detail and better understanding of surroundings.

New things in the environment are still unobserved, unless attention is specifically directed to them. There is still limitation of the ability to judge success, but instruction and guidance have improved self-criticism with regard to many tasks suitable to the ability level.

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## 13, 14, AND 15 YEARS

Height and weight for the majority approximate the normal standards of 60 inches and 97 pounds for the thirteen-year-old; 62 inches, 109 pounds, for the fourteen-year-old; and 63 inches, 116 pounds, for the fifteen-year-old. Marked physical development for the majority of both sexes takes place as in normal adolescents. Between the

The company of the opposite sex is sought earlier by girls than by boys, with normal boys of the same age or older dull boys as the selected companions.

Due to identification with elders, jobs and housekeeping assume social and personal significance, girls being interested in preparing foods and making

Mental development approximates that of normal children eight to ten years of age. The power of voluntary attention and concentration on a given task has increased. Rote memory is good, memory of images is improving, logical memory is still poor.

Powers of comparison, generalization, and abstraction are weak or lacking.

latter half of the thirteenth year and the fifteenth year the majority of girls have their first menstruation. Most of the boys reach pubescence between the early months of the fourteenth year and the middle of the fifteenth year.

Many individual variations occur as in normal children. Taller boys and girls reach periods of rapid growth and subsequent periods of slower growth at earlier ages than shorter boys and girls. Slow growth before the teens is often followed by proportionately rapid growth during adolescence. Proportionate weight of muscles to total body weight rapidly increases. At fifteen years the total musculature approximates 32.6 per cent of the entire body weight; at sixteen years it approximates 44.2 per cent.

Breathing capacity and physical strength and endurance generally increase as in the normal. Work can be carried on for longer periods. Voice changes occur during these ages.

Motor ability and eye-hand co-ordination improve with a resulting increase

their homes attractive, boys wanting to make worth-while things, to work co-operatively, and to feel through the use of tools and machinery that their jobs are real. Remunerative jobs attract, the girls helping with home duties, and the boys doing odd jobs — running paper routes, delivering for the grocer, etc., with increased dependability.

With increased sensitiveness to situations in the environment — the home, financial status, clothes, foreign background — limitations are more keenly felt. There is also a strong urge toward independence with some resentment at being told repeatedly what to do and what is expected.

Active play interests, such as skating, hiking, swimming, baseball, football, basketball, card games (such as poker, rummy, and Pedro), and checkers predominate in the boys and also to a lesser extent in the girls. Folk dances, social dancing, and other rhythmic exercises also appeal to both.

Less interest is shown in group organi-

The differences from the normal child are most marked in respect to these abilities. Concrete illustrations of the meaning of such words as charity, justice, or envy may be given if taught, but definitions of abstract words cannot be formulated.

Simple interpretations of situations in pictures may be made, but lack of creative imagination is striking. Responses may even be the description of action alone.

Language expression is still far below expectation for the normal child. Descriptive and abstract terms are lacking. The use of prepositions and adverbs is not common. The majority have probably not acquired more than 4000 to 5000 words, contrasting with about 9000 for normal children of the same age.

Learning ability in practical situations is increasing. More adequate adaptations are made in new situations.

A growing awareness of life and of the world of activity leads to more ready observation of details of the

## 13 14, AND 15 YEARS (*Cont.*)

### PHYSICAL TRAITS

in kind and number of hand skills and in ability for sustained effort and interest to do work well.

Speech defects occur among about 4.5 per cent, compared with 12 to 13 per cent at earlier years.<sup>1</sup>

### SOCIAL TRAITS

zations, clubs, and leagues than by normal children because of inferior ability to fulfill requirements. "Gangs," or group chumming, develop among the boys.

Stories of fact, history, invention, adventure, and sport, magazine articles describing how to make things, including material in science magazines, are enjoyed by the boys. To the girls the greatest appeal is made by stories of familiar experiences of girls of their own age, stories of home life, fairy stories with an element of romance, fiction of love and romance, the cheap newsstand variety of fiction and magazine, the funnies, and the picture news sheet.

### MENTAL TRAITS

environment and of ways in which they are related to it.

Greater general interest and a tendency toward participation are noticeable in the majority.

<sup>1</sup> See footnote on page 21.

The description of traits and development in this tabulation is at best only a brief summary of generalizations for the respective ages. Many mentally retarded children approximate this picture, but many, likewise, would show marked deviations, as would be true in any group. The following descriptions of individual mentally retarded children will illustrate more specifically the actual situations encountered.

## DESCRIPTIONS OF INDIVIDUAL CHILDREN

### AN EIGHT-YEAR-OLD CHILD

Sam, aged 8 years 6 months; mental age 6 years 1 month; I.Q. 72; of Italian parentage.

*Physically.* He measures  $45\frac{1}{2}$  inches and weighs  $55\frac{1}{2}$  pounds. In height he is below the norm of the average eight-year-old, which is 50 inches, but he is stocky in build, robust, and very strong. His speech is plain and distinct. He skips, hops, and jumps with ease, and catches a ball at a distance of twenty feet. His eye-hand co-ordinations are improving. Three months ago, when he entered the special class, he did all handwork carelessly and crudely. He is still awkward with crayons and scissors but now shows greater control and neatness. His greatest improvement has been in sawing.

*Socially.* Sam comes from a below-average Italian home and is the fourth in a family of eight children. The mother says he is a good boy at home. He washes the dishes and takes care of the babies. He plays with boys of his age and likes to play ball and marbles. He has not yet learned to play well with other children in school, wants his own way, is quarrelsome and moody, and does not obey readily. Often he does not want to enter into group activities. He wants constant praise for all his efforts. He likes to hear stories and listens attentively, but he never offers to tell any stories himself.

*Mentally and educationally.* At 8 years 6 months he has the learning ability of a first-grade child. He fails in tests

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of associative memory and rote memory for years six and seven. He defines objects in terms of use and cannot give any difference between a fly and a butterfly or a stone and an egg. In describing pictures he notes objects and actions. He cannot print his name without following a copy, and he recognizes no more than ten word forms. He counts to twenty and writes figures to ten.

### AN ELEVEN-YEAR-OLD

Anthony, aged 11 years 1 month; mental age 7 years 4 months; I.Q. 67; of Italian parentage.

*Physically.* He is a healthy, well-developed lad with no physical defects. He is up to height for his age and slightly overweight, being 54 inches high and weighing 78 pounds. He is dark-skinned and dark-haired, with rather small, sharp eyes. His muscular co-ordination is well developed. He does as well as the average eleven-year-old in gym activities, such as running, skipping, jumping, and catching and throwing a ball. He exceeds his classmates of nine, ten, and eleven sufficiently well to attend gym with the eleven- and twelve-year-old special-class boys.

He has made things of wood that are substantial and strong enough for play — a kite, a wheelbarrow, and a truck. He can saw and hammer with ease and is for the most part interested in doing his work well.

*Socially.* Anthony comes from a fairly comfortable Italian home. He enjoys his home and is obedient to his parents, but feels no obligation to co-operate with his sister, who looks after him during his mother's absence at work.

He usually plays outside with younger boys and likes situations where he can be first. In school, he often gets into trouble because he will use dishonest means to win. In class he is courteous, uses "please," "thank you," "excuse me," and so forth, and allows the girls to go first. He is obedient but not always considerate of others if his own pleasure is interfered with.

He has many play interests. He enjoys ball, competitive

team games, and seasonable games such as marbles, jacks, and kite flying. He likes to excel in running, jumping, throwing, and other physical activities. During the winter he talked a great deal about his coasting and skiing experiences. He likes being out of doors and has an uncle who often takes him to one of the city parks for play and sports. He likes music, songs, rhythms, and marching.

He enjoys listening to stories, likes books, and goes to the story hour at a near-by library. At the present time *Pinocchio*, *Peter Pan*, and *The Runaway Sardine* are his favorite stories. It may be noted in passing that physically and socially he is in advance of his mental and educational development.

*Mentally and educationally.* Anthony has a mental age of 7 years 4 months; that is, at eleven he has the learning ability of the average second-grade child. In language he associates ideas slowly. He can give the difference between two objects like stone and egg, or wood and glass, but he cannot see the similarity between wood and coal, or apple and peach. His vocabulary does not measure up to an eight-year standard. In describing objects, however, he classifies and describes readily. He is slow in reading for his mental age and experience and is still acquiring a first-grade reading vocabulary. He writes nicely and spells well enough to write very simple original sentences. He can add with carrying and subtract without borrowing. He makes change from fifteen cents, knows inch, foot, yard, pint, and quart, and works simple problems. His concepts of time are developing. He can name the days of the week, and knows the month and day but not the year. He can read the clock at the hour or after the hour to thirty minutes. He drew a clock face for the examiner and showed the time as "five minutes after eight."

He is well orientated as to locations in the school and in the neighborhood. He follows directions readily as to placement of materials and so forth.

When Anthony's learning ability and accomplishments are contrasted with the fifth- or sixth-grade accomplishment of the average eleven-year-old, his retardation is obvious.



## A FIFTEEN-YEAR-OLD

Harry, aged 15 years 3 months; mental age 10 years 4 months; I.Q. 68; of American parentage.

*Physically.* He is a thin, dark-complexioned boy with a kindly expression. His height is 59 $\frac{1}{4}$  inches and he weighs 85 pounds, in contrast to the average height of 63 inches and weight of 116 pounds for the normal boy of his age. He reached pubescence about six months ago.

He shows some signs of nervousness, but there are no physical defects. He speaks clearly and distinctly. His motor co-ordination is good. In handwork he does a neat, painstaking job, has made small pieces of furniture, and at present is succeeding well with machine work in the shoe repair shop.

*Socially.* The neighborhood in which he lives is slightly below average. The home is comfortable and clean with fluctuating economic conditions, due to the father's irregular employment as a laborer and the mother's part-time employment as a practical nurse. One brother is working and two younger sisters are making normal progress in school.

Harry is happy at home and is treated kindly by his family. He is an affectionate type of boy and shows his feelings easily. He likes to have his own way and is likely to be quarrelsome with his schoolmates if he does not get it.

He enjoys almost any kind of sport at school, especially football, baseball, dodgeball, and soccer. He has only one boy companion with whom he walks to and from school. He spends his time outside school with the other members of his family. He is required to be at home at five o'clock, and goes to bed at eight.

He sometimes enjoys a game of rummy or pedro with the family. He reads a great deal, listens to the radio, and has a regular Saturday trip to the movies. His interests in all these activities center around mystery, adventure, fighting, and airplanes. He does not care for music. He has several Boy Scout books. He recently read *Uncle Tom's Cabin* and enjoyed it. In school he reads the *Boy's*

*Life* magazine, *Popular Mechanics*, and books on geography. He is particularly interested in the modes of living in tropical countries.

Harry has no duties outside school. He says that as soon as he is old enough he wants to join the navy and go to sea, but that his father wants him to become a steam-shovel operator.

*Mentally and educationally.* At fifteen years of age he has the learning ability of the average fifth-grade child. Harry succeeds in tests of rote memory and visual imagery at a ten-year level. He lacks ability in powers of comparison, generalization, and abstraction. He cannot state a similarity between three things like wool, cotton, and leather, or book, teacher, and newspaper. He is unable to generalize from the fables of "Hercules and the Wagon," and "The Milk Maid and the Eggs." He indicates that he has some idea of the meaning of such abstract terms as pity, revenge, and charity, but he cannot give a definition of them.

In describing pictures, he gives the interpretation of the setting and actions, and he notes detail to a marked degree. On the Stanford-Binet Vocabulary Test, his score is below that for the average twelve-year-old. His concepts of time are well developed as to time of the year, span of time, the past, the future, and the like.

At fifteen years of age Harry has a reading vocabulary and comprehension in reading equal to about that of the fifth-grade child. In number work he knows and uses all the fundamental processes, simple fractions, and the common measures. He writes a fair letter. He has a larger background of general information than many retarded boys, and has an air of wanting to find out about things.

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### QUESTIONS AND SUGGESTIONS FOR STUDY

1. State in your own words your understanding of the meaning of the terms mental age, educational age, social age, and physiological age.
2. Which age has the traditional school of the past considered the most important? Why?
3. Ask six to ten eight-year-olds to draw a picture for you. Then ask each one what his picture tells and record the description on the back. What do these pictures tell you about the development of the power of association in eight-year-olds?
4. Follow the same plan with a group of twelve-year-olds. What do you infer about the development of the power of association at twelve years of age compared with that at eight years?
5. Outline the physical, mental, and social characteristics of the normal six-year-old. (See reference to Strang's *An Introduction to Child Study* below.) Make a similar outline for the eight-, nine-, and ten-year-old group of mentally retarded children. Compare this latter group with the six-year-old group.
6. Note the play interests for the group of eleven- to twelve-year-olds listed on pages 23 and 24 of this book. Compare these interests with those of a group of normal twelve-year-olds.
7. Describe as to size, school grade, school ratings, play interests, and companions two children you know who are of the same chronological age. How do you account for their likenesses and differences?
8. Report from your own experience instances of pupils who made good adjustment during adolescence, and instances of others who made poor adjustments. What conditions in the pre-adolescent environment of these pupils made for subsequent good or poor adjustments?
9. Make a plan that would help you as a new teacher to become familiar with the stages of social development of your individual pupils. Consider the mak-

ing and recording of careful observations for this purpose.

10. Choose a normal child whom you know who is of approximately the same age as one of the children described in this chapter. Compare the development of the two physically, socially, educationally, and mentally.

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# Chapter Three

## A SUMMARY OF PRINCIPLES AND FACTS

IF a suitable program of education is to be provided for the mentally retarded, it is evident that there must be certain guiding principles based on the psychology of this group. The descriptions in Chapter II of the child's development at different chronological-age levels give us the key to these principles, which are briefly summarized herewith.

### PSYCHOLOGICAL PRINCIPLES WITH EDUCATIONAL INFERENCES

*Physical development.* In respect to physical development, the mentally retarded come very near to the normal group. Their accomplishments in all physical activities approach closely the accomplishments of the normal child. Provision, therefore, for the development of a healthy physique and healthful living habits, including satisfactory outlets for physical energy, comprises an important place in their education.

*Motor ability.* The mentally retarded child approaches nearer to the normal child in sensory acuity and motor ability than in more definitely intellectual processes. He approximates success at his chronological-age level most nearly in processes which call for eye-hand co-ordinations and for motor response. He enjoys the manipulation of materials and the actual operations in the construction of any product. He can generally be taught to be proficient in hand skills. Practical arts and the "doing" experiences should, therefore, play a major part in his education.

*Mental ability.* Mental ability is perhaps the most significant factor today in success and in adjustment to school life for the majority of children. The mental ability of the slow-learning child at any age is characterized by a slower rate of and a less full total development, than is that of the normal child, and particularly by limitations in abilities having to do with abstract thinking and symbols such as are involved in association, reasoning, and generalization. Varying I.Q. levels within the group also indicate varying degrees and rates of learning ability. Accomplishments along the way and ultimate goals for the individual are dependent on rate of mental growth and potential capacity. The kind and number of learning situations provided, therefore, must be suited to the child's level and rate of learning ability so that he may achieve with reasonable success. When the mentally retarded are expected to accomplish work beyond their mental level, failure and discouragement result. As the teacher keeps this principle in mind, giving ample opportunity for potential development, she will not exert undue pressure in trying to accomplish what may be beyond the child's present or ultimate ability.

The child's limited ability to apply in one situation experiences learned in another, to anticipate consequences, and to criticize his own conduct, indicates that he must learn through concrete experiences, that numerous specific instances for applying an idea or principle must be provided in directing him toward generalization, and that desirable habits and attitudes rather than judgment must be developed.) Normal children acquire incidentally much information and many habits that must be taught specifically to this group. As satisfactory development and adjustment of the mentally retarded are so largely dependent

upon planned procedures, the child should be carefully guided in learning situations that will develop specific knowledge, skills, attitudes, and habits that will function in life situations. (In other words, the desirable choice and organization of materials, of curriculum content, and of methods for the slow-learning are those that will aid in making learning specific, concrete, and directly functional in life situations.

*Social development.* The mentally retarded child is inevitably having, as he grows older, many of the experiences of normal children of his own age. With adolescent maturity, for example, comes the development of strong emotional tendencies, interest in vocations, in the home, in friendships, in the other sex, and a strong desire to be like others. As a result of physical development and maturity, there is a maturity of social interests, a fact which has a very important bearing on his education. It means that throughout the school life of the child learning situations must be suited to his physiological and social age as well as to his mental age. The child of thirteen or fourteen years with a mental age of eight or nine years will not be interested in reading matter suited to the normal eight- or nine-year-old. Although his comprehension of content and his mastery of technique may be the same, his interests have carried him beyond the stage of repetitive folk tales and fanciful stories of animal characters and child life. The stories and illustrations of the third- and fourth-reader level, although suited in difficulty to his ability in many instances, are not suited to his physical development or his social experience. They appear childish to him. Reading situations — in fact, (any learning situations — must be grown up and dignified in their appeal and appropriate to his physiological

and social age, although they must not call for intellectual processes beyond his ability.) This principle must be applied all through the school life of the mentally retarded child.

*Unevenness of abilities.* When normal children are measured in school tasks, they show more or less unevenness in abilities; they do better in some subjects than in others. But mentally retarded children on the whole show more unevenness in abilities than do normal children.<sup>1</sup> The relative superiority of their performance in motor tasks has already been referred to. As individuals, they may also succeed better in any one or more school subjects, as English, reading, or spelling, than in the others. The teacher should accordingly take into account the maximum achievement of which the child is capable in each of the many abilities to be developed and provide opportunities for him to gain accordingly.) In planning for and guiding both group and individual activities, this principle should be considered.

#### THE PROCESS OF LEARNING

Conceived in its broadest aspect, learning may be thought of as a dynamic process whereby the continuous interaction between the organism and environment produces growth and development of the total personality. Learning may be thought of as a continuous process of adjustment on the part of the individual to his environment. It takes place in the same way in all individuals, regardless of differing rates of learning ability. Learning, explained simply, means that the individual is finding and establishing new or better ways of responding or behaving in any

<sup>1</sup> See L. A. Hollingworth, *Psychology of Subnormal Children*, pages 125-127 (The Macmillan Company, New York; 1920).



situation. The young child may be learning how to use a spoon, how to stand alone, or how to hold a book. The child of school age may be learning how to write words new to him, how to write a letter, how to pitch a ball, how to bake a cake, how to estimate mileage between two points on a road map, or how to read lumber items on a stock bill. In any of these situations there are present the individual and his need as a learner and the environmental set-up which provides the means for learning. As learning takes place, there is constant interaction between the two. It is recognized that, in many instances, the learning may be incidental to, or may take place without, the individual's having consciously defined his need, as is illustrated by the young child's attempts to make such elemental adjustments as feeding, babbling, creeping, standing, walking. But as the individual grows older, adults at home and at school are constantly aiding him in situations where his need is consciously formulated, thus giving conscious direction to the course that his learning takes.

For the present purpose, the learning process for the child of school age may be stated in the following terms: The individual first realizes a *need* for adjustment to the elements present in his environment; i.e., there is a condition of awareness in the learner which is a vital part of the learning process. This need directs or guides him as he makes his responses. Second, as the individual progresses, *consciousness of success*, or *recognition of the right response*, makes him more definitely and understandingly aware of his goal, stimulating and guiding his progress toward it. Third, there must be sufficient *recurrence* of situations for the learner to become so thoroughly at ease in his new form of behavior that it becomes a part of him.

An illustration of this development of learning may be helpful. John, aged eight, wants to address an envelope for a letter he has written requesting a stamp catalogue. The need is evident. The classroom environment, with teacher and children ready to assist and with materials at hand, provides the means for carrying out his purpose. The suggestions and approval that come in discussing the right form, in trying out the address on the board and then on paper before he finally addresses the envelope, all serve to help John realize more fully what it means to address an envelope — to achieve satisfactory spacing, spelling, and legibility. He is aided in choosing the right responses by the approval and satisfaction that come from his efforts. Facility and ease in this form of behavior — addressing envelopes — will come with sufficient recurrence of the situation. Better writing that will function in other situations, greater ease in meeting a new situation, and other skills and habits may also be expected to accrue.

*The elements of need and recurrence.* The three elements of need or purpose, recurrence, and success are essential in effective learning for the mentally retarded as well as for the normal. Because of the inability of the slow-learning child to respond to many and diverse elements, his school environment should be more carefully controlled and planned and more frequent opportunities provided for meaningful recurrence than in the education of the normal child.

But too much emphasis has commonly been placed on the element of recurrence in the education of the slow child and the element of need too often overlooked. The slow child, like every individual, has needs and purposes, and when he is placed in an environmental setting that provides the stimulus and

the means to accomplish these purposes, continuous learning and development take place.

*The elements of success and approval.* The element of success is also of great importance in the education of the slow-learning child. Child nature in general is social. It responds to the presence of others; it is interested in the behavior of other persons; it tends to share its activities and to desire approval. All these impulses have too often been frustrated in the case of the slow-learning child, who, because of his inability to compete with normal children and to meet normal standards both in and out of school, has likely found few opportunities for sharing his experience and winning approval. He has consequently an even greater need than the normal child for specially planned opportunities in his school life for achieving some socially recognized success.

The element of approval also has importance for the slow-learning child. Since he is less alert to his needs he requires more positive encouragement to work toward definite goals than does the normal child, who more readily recognizes desirable goals and their purposes. Expressions of approval will give him this encouragement.

The special class should accordingly provide an atmosphere where the child can participate in living with his equals, where self-respect can be developed as well as habits and ideals of working with others, of taking part in co-operative problems, and of winning and giving approval. Opportunity must also be provided for the recognition of individual effort and accomplishment without unfair comparisons with standards beyond the child's power of attainment.

*Individual differences within the group.* The differences between the mentally retarded group as a whole and the normal group have been discussed. Attention

has also been called to differences in the rate of learning ability within the group and to unevenness of abilities of individuals. But consideration must also be given to the fact that every child is an individual problem whose progress is conditioned by his physical condition, innate mental endowment, attitudes, and environment. Although possessing the same characteristics of development, children differ in respect to capacity for learning and in respect to the opportunities afforded by their individual home and school environments, including the influence of others' attitudes of approval or blame. Some may have the advantage of good physique and normal physical development, while others may be physically immature or hindered by physical defects. Each child requires careful, intelligent study with regard to all these factors.

#### PHILOSOPHICAL AND PEDAGOGICAL PRINCIPLES

In any plan of education, the individual is the center; the purpose is his complete harmonious growth and development. And nothing short of this is a satisfactory educational aim for the mentally retarded child, although he may be limited in his learning ability. The ways in which the life of the mentally retarded child is most like that of the normal child should be realized and emphasized by the teacher who would realize this purpose. Dr. Arnold Gesell says, "In general, he [the mentally defective child] must be approached as though he were a normal child with certain limitations and handicaps. . . . Recent developments in the study and treatment of mental deficiency have tended to emphasize the normal rather than the pathological aspects of mental defect."<sup>1</sup>

<sup>1</sup> Arnold Gesell, "The Care of Intellectually Inferior Children," in *The Child, His Nature, and His Needs* (Michael J. O'Shea, Ed.), page 263 (Children's Foundation, Valparaiso, Indiana; 1924).

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If the similarities in the child life of the normal and the mentally retarded are recognized, it will be noted that the philosophical and pedagogical principles underlying the education of the mentally retarded are those underlying the education of any child.

*Adaptation to the individual.* Perhaps the foremost basic principle in the new education is that consideration must be given to the needs of the child as an individual. John Dewey says, "The child is the starting point, the center, the end. . . . It is he and not the subject matter which determines the quality and quantity of learning."<sup>1</sup> The teacher must be a student of the individual children in her group. She should have an intimate understanding of the background, the interests, the abilities, and the attitudes of each child. She should be able to interpret their influences on his present life adjustment and on his needs as a learner.<sup>2</sup> And according as she discovers the stage of his development with respect to his abilities, interests, and attitudes, she plans and carries out a program instead of utilizing a prescribed uniform plan of procedure and subject matter for all her pupils. In other words, the situation is planned to meet the needs of the child; the child is not fitted into a planned situation.

*The use of freedom.* Children should have the opportunity to develop naturally and freely. The classroom should have an informal, friendly atmosphere, with the furnishings, materials, and program arranged so that there is opportunity for movement and freedom of expression on the part of the children. They should participate freely in all that takes place.

<sup>1</sup> John Dewey, *The Child and the Curriculum*, page 13 (University of Chicago Press, Chicago; 1902).

<sup>2</sup> See Part Two, Chapter VII.

In an informal atmosphere even the slow child, who naturally lacks initiative, will develop the ability to question, to make suggestions, to confer with others, to find the material he needs for a particular piece of work, and to try things out. As he is given freedom in his work, however, the child must learn to consider others and to realize that his own impulses and behavior must not interfere with their rights but must conform to certain rules and regulations in order that the work of all may be carried out harmoniously and successfully. A sense of individual freedom, subject to the good of the group, will then develop a feeling of responsibility as the child learns to meet problems independently and to choose conduct that is socially helpful. If freedom in the classroom is to accomplish these purposes, it must be controlled by a guiding purpose and call frequently for sustained application and effort to carry out a piece of work and to master a situation. Within this atmosphere of freedom the slow-learning child, too, must be given careful teacher guidance in the choice and development of his undertakings, for he is not so apt in utilizing former experiences, in foreseeing consequences, and in persevering in the face of difficulties as is the normal child.

*The development of interests and needs.* The interests and needs of every individual are to a large extent derived from and influenced by his immediate environment. This fact is particularly true of the mentally retarded, whose suggestibility is great and who lack that capacity for generalization and abstract thinking that often suggest to normal children interests and needs for self-improvement that are relatively independent of the immediate surroundings. It is therefore of very special importance that the environment of the slow-learning child should supply interests in

and challenges to accomplishment. But unfortunately the homes of the majority of these children are below average and consequently provide less of such challenge and stimulus than do those of the majority of normal children. The home environment of these children is very often so barren that it fails to provide even those simple experiences which are essential to the basic adjustments of social life. Adequate facilities for preparing and serving food are often lacking, books and playthings are few, and the child is generally deprived of many opportunities to learn through such elemental experiences.

In the case of the mentally retarded the school accordingly has a special responsibility to provide an adequate and stimulating environment. Opportunities must be plentiful for those experiences basic to personal and social development and stimulating and challenging to accomplishment that are not provided by the home. These experiences should be so enjoyable to the child that his life in school will be emotionally satisfying, and they should be so planned that they will carry over into his out-of-school life. In this way he is helped to meet better the conditions of life about him, his interests are increased, and his realization of his needs and of possible ways of meeting them is more clearly defined.

*Activity and actuality in experiences.* Children are by nature active. Child life is full of activity, impulse, movement. The basis of all learning or behavior is reaction — mental, physical, social, or emotional — and the school should accordingly provide learning situations in which the child is stimulated to react in all these ways. Too much of school time in the past has been devoted to mental reaction and to passivity — listening, reading, and thinking. Under such a pro-

gram the mentally retarded child makes very little progress. He must have opportunity and encouragement to make physical, emotional, and social responses, as well as mental ones.

Learning, it is more and more being realized, occurs largely through concrete experiences that are a part of real life — going on excursions, for instance, or observing and handling such actualities as plants, animals, or specimens of any kind that can be brought into the classroom. Experience for the slow-learning child must also be kept on a concrete “doing” level through the use of materials, tools, apparatus, and machines. For him these facts are of especial importance, since learning which depends only on narrated, described, and recorded experiences will always be more or less meaningless to him.

*Units of work.* Recent curriculum practices reflect the conviction that when the subject matter of education is centered and integrated in such real and vital enterprises as usually comprise “units of work,” rather than developed through subject-matter organization, learning increases in effectiveness. The slow-learning child, since he transfers and applies his learning to new situations less readily than does the normal child, will profit to an even greater degree than the normal child by having the learnings he is to acquire presented in this way in units that suggest the situations of his life outside the school. Health problems, school, home, family, and community problems, recreational pursuits, industrial arts, home economics, and prevocational activities, become centers around which learning units for him may well be unified. In these settings the child meets real or first-hand problems and out of them grows the need for investigation, for study, for construction, and for mastery of the tool subjects.



The more nearly the learning situation approximates a real-life one, the more effective will the learning be. The content of the curriculum, therefore, should be organized in units that comprise meaningful wholes in terms of life's demands on the slow learner.

*Mastery of the tool subjects.* The majority of mentally retarded school children can master enough of the tool subjects for practical use in their lives, but this mastery comes very slowly and requires a much longer period of time than in the case of the normal child.

The problems and experiences of the units of work presented should create a practical need for the use of the tool subjects — spoken and written English, reading for information and pleasure, computation, legibility in handwriting — but definite practice closely related to that need must recur persistently in order to insure mastery of these tools.

*The need for self-confidence and self-reliance.* Satisfactory adjustment in life calls for self-confidence, self-reliance, and independence on the part of the individual. The mentally retarded, because of their inability to compete successfully with normal children, tend to lack these essential qualities. It becomes, therefore, the responsibility of the school to provide experiences that will make this group self-confident, self-reliant, independent workers at tasks commensurate with their learning abilities. The mentally retarded child should therefore be persistently encouraged to develop the best that is in him and to realize that he has some worthy contribution to make to his group in the home, the school, and the community. Through group co-operation he should be stimulated to realize the importance of this potential contribution and to

exert his best efforts toward it. However small his contribution may be, he should be helped to feel its value and the possibility of his making it successfully. There should be no spirit of rivalry or competition with other children, as such comparison is likely only to emphasize failure for him; there should be for the slow-learning child only competition with his own record, thereby encouraging him to his best possible efforts.

*Participation with the normal group.* The majority of the slow-learning after completion of their schooling have some contact with the industrial and social life of the normal group. During their school life it is accordingly desirable for them to take as much part as possible in the regular life of the school, the home, and the community. They should feel that they are a part of the school and should be given the opportunity of taking part in assemblies, clubs, athletic meets, and any other activities of the school group in which they are capable of participating. They may also be helped specifically to realize and assume their share in home responsibilities.

*Co-operation with the home.* The child's education is of course not entirely gained at school. It takes place also in his home and the larger community in which he lives. Unified efforts in the development of right habits, skills, attitudes, and appreciations on the part of both home and school are desirable. The teacher should therefore be thoroughly familiar with the home environment. The understanding teacher can accomplish a great deal in the way of improving attitudes and co-operation in the home, where it seems desirable that these be improved or brought into closer harmony with those of the school.

## SUMMARY

The principles on which education of the slow-learning should be based must place emphasis on the child as a growing individual; on the level and rate of his mental development; on his physical and social level of maturity; on the nature of his learning processes; and on the conditions of his environment. Pupil classification, classroom environment, teaching objectives, choice of curriculum material and method, and the arrangement of programs must all be planned with these basic principles and facts as premises.

## QUESTIONS AND SUGGESTIONS FOR STUDY

1. Make a two-statement summary of each psychological principle summarized in this chapter and its resulting educational implication.
2. Make a two-statement summary of each philosophical and pedagogical principle and its resulting educational implication.
3. Choose five of these principles that you consider most significant from the standpoint of method.
4. Choose the five principles that you consider most significant for the choice of curriculum material.
5. What conditions make it especially difficult to find reading books suited to the mentally retarded child?
6. Name as many similarities as you can between the life and nature of the normal and those of the mentally retarded child.
7. Choose two learning situations that might take place in a fourth grade and describe the learning process for each.
8. Suggest desirable ways of giving approval to the mentally retarded child.
9. Discuss and illustrate the statement that "too much of school time in the past has been devoted to mental reactions and passivity."

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# *Chapter Four*

## THE MENTALLY RETARDED IN THE COMMUNITY

SCHOOL life for the slow-learning group is usually continued to the limit of the compulsory school age — fifteen or sixteen years.<sup>1</sup> Attendance beyond that limit has thus far been precluded, schools generally having had no further training to offer and the economic conditions in the homes of the majority requiring that the child begin to earn as soon as he could legally leave school and could secure a job. It has, therefore, been the duty of the school to prepare this group insofar as possible to become self-respecting and self-supporting wage earners by sixteen years of age. This condition is in contrast to that of the normal child, who in his early schooling is being prepared for junior and senior high school.

Due to changing industrial conditions, wage earning may generally be further postponed; and a longer period of schooling will then have to be provided.

### STUDIES OF AFTER-SCHOOL CAREERS OF SPECIAL-CLASS PUPILS

Studies of special-class pupils following their withdrawal from school throw light on the extent to which they find employment, the types of jobs they are able to fill, their earning ability, the factors affecting steadiness of employment, and their social adjustments. They indicate the industrial and social strata in which

<sup>1</sup> The compulsory school-age limit in the majority of the states is sixteen years, and there is a tendency to advance this.

this group finds a place and the degree to which the school has prepared them to make satisfactory adjustments.

One of the earliest but most significant studies of former special-class pupils from the standpoint of adjustment was made in Cincinnati and was reported by V. V. Anderson and Flora May Fearing.<sup>1</sup> The study was made of a total group of 298 who had been out of school from one to six years. The report states that "the occupations of these individuals were by no means limited to odd jobs and simple day labor. There were 11 salesmen or saleswomen, 8 machinists, 6 construction (building trades) workers, 5 printers and apprentices, 60 factory workers, 12 messengers and bell boys, 11 houseworkers, and so forth."<sup>2</sup>

Approximately half the group employed in industry were earning fifteen dollars a week or more. The individuals among them who were not additionally handicapped by personality difficulties and character defects were the most likely to be in industry, and were likely to hold their jobs longer and to receive higher wages than the others. Approximately half the group had held their jobs for a year or longer. Forty-four of the women and sixteen of the men had been married. Only 20.2 per cent of the group had court or institutional records for delinquency. While these percentages indicate satisfactory social adjustments for a large number, the records showed that they had had many social problems, 72.2 per cent of the families represented having been registered with health and other social agencies.

<sup>1</sup> V. V. Anderson and Flora M. Fearing, *A Study of the Careers of Three Hundred Twenty-Two Feeble-minded Persons*, page 31 (National Committee for Mental Hygiene, 50 West Fiftieth Street, New York City; 1923).

<sup>2</sup> *Ibid.*, pages 29 and 30.

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The two following cases, illustrating respectively successful and unsuccessful adjustments, are striking examples of the effect of personality, physical condition, and home condition on the ability of the mentally retarded to find and to continue to keep satisfactory employment.

CASE 2. C.; white; male; age twenty-two; marital condition — single; intelligence quotient — 65; personality make-up — no outstanding personality difficulties; physical condition — good; behavior difficulties and misconduct — none; one blind brother. The family has had contact with three social agencies, all dealing with health. The home index is 19 (above average); the neighborhood index, 17 (average).

C. left school at fifteen. He has had three jobs, two of which have been in structural iron work. His present position, which he has held for three years, is that of a cutter in a shoe factory. He is earning thirty-five dollars a week. His employer's report is: "Energetic, ambitious worker. Is sociable and affable in the factory."<sup>1</sup>

CASE 8. B.; white; male; age eighteen; intelligence quotient — 64; B. shows very definite and outstanding personality difficulties and character defects. He is in poor physical condition — thin, nervous, and restless — and smokes incessantly. He is known as a bum around the cheap dance halls of the district. His family has had contact with four social agencies (one dependency, two delinquency, and one health). The father is alcoholic, a brother is alcoholic and has deserted his wife and child, the mother is feeble-minded, a sister is feeble-minded, and the mother and father are divorced.

B. began work when fifteen years old. In the first year he had sixteen jobs. He gives the following reasons

<sup>1</sup> V. V. Anderson and Flora M. Fearing, *A Study of the Careers of Three Hundred Twenty-Two Feeble-minded Persons*, page 25 (National Committee for Mental Hygiene, 50 West Fiftieth Street, New York City; 1923).

for leaving positions: "Mother didn't want me to work there." "Not enough money." "Fired because sick one day." "Didn't pay enough." "Laid off." "Work slack." "Acid spoiled my clothes, so quit." "I didn't like the work." "Didn't like it. The work was too heavy." His present employer reports: "Getting careless. Will be discharged at the end of the month unless he does better work. His work is very easy and requires no intelligence."<sup>1</sup>

The authors of this study have concluded that "the elements that enter into the failure or success of the mentally defective in life are in no sense different from those that affect the lives of normal persons" and that a large proportion of this group may with proper training and adequate supervision develop into "decent, self-supporting citizens."<sup>2</sup>

Another significant study of former special-class pupils is reported by the Children's Bureau of the United States Department of Labor.<sup>3</sup> An investigation of about a thousand pupils who had left special classes over a period of four years to go to work was conducted in Rochester, Detroit, Newark, Oakland, San Francisco, and Los Angeles.

The report gives the following information: The great majority of the individuals studied had gone into work of unskilled or semiskilled types—more than half into the manufacturing and mechanical industries. The next largest number of jobs for boys were classifiable as transportation—work as teamsters, truck drivers, and taxi drivers. Next to factory work, the girls were engaged chiefly in personal and domestic

<sup>1</sup> *Ibid*, pages 27 and 28.

<sup>2</sup> *Ibid*, pages 29–30.

<sup>3</sup> Alice Channing, *Employment of Mentally Deficient Boys and Girls*, Children's Bureau Publication No. 210 (Superintendent of Documents, Washington, D. C.; 1932). See also Fourteenth Annual Report of Chief of Children's Bureau (Superintendent of Documents, Washington, D. C.).



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service. Many also were salesgirls in stores. The average beginning wages for both boys and girls were between twelve and fourteen dollars and the cash wages of the last jobs held averaged between sixteen and twenty dollars. The employers rated about 78 per cent of the work performed by the boys and about 80 per cent of that performed by the girls as satisfactory.

Investigations of the number of individuals who had been under probation to juvenile or adult courts and those who had served sentences in penal institutions showed that 14 per cent of the group had court records. In the Rochester group 50 out of 101 girls had married by twenty years of age and 7 of 105 boys.

The following conclusions are stated in the report:<sup>1</sup>

The study as a whole would seem to indicate that there is place for subnormal boys and girls in industry. Even those who showed little mental ability could perform certain types of work satisfactorily. Of these subnormal young people those in the lower grade had held their last jobs longer than those of higher mental level; this probably indicates that they were more willing to settle down at tasks that were monotonous and irksome to those of higher intelligence. The percentages of promotions for the different intelligence groups and wage increases in last over first jobs show that ability to progress increased with a higher intelligence quotient. The fact that so many young persons of less than average mentality were able to earn a livelihood is doubtless due in part to the training given them while in the special classes, in good habit formation, and in a right attitude toward work.

<sup>1</sup> Alice Channing, *Employment of Mentally Deficient Boys and Girls*, Children's Bureau Publication No. 210 (Superintendent of Documents, Washington, D. C.; 1932).

See also Fourteenth Annual Report of Chief of Children's Bureau (Superintendent of Documents, Washington, D. C.), pages 13 and 14.

## *The Mentally Retarded in the Community* 55

The results of a recent survey authorized by the Massachusetts state legislature to determine the need for social supervision of former special-class children under twenty-one years of age also give favorable returns.<sup>1</sup>

The following information was secured from 230 mentally retarded boys and girls who had formerly attended special classes :

SOCIAL ADJUSTMENT	PER CENT
No delinquent record . . . . .	82
Delinquent record . . . . .	18
Time spent profitably — regular hours, no street loitering, moderate attendance at movies, no “gang” associations, etc. . .	80
Time spent unprofitably . . . . .	20
Homes effective in adjustment . . . .	76
Homes not effective in adjustment . . .	24
VOCATIONAL ADJUSTMENT	
In industry outside of home	
Adequate . . . . .	37
Adequate but opportunity for work lacking . . . . .	23
Inadequate . . . . .	4
In home	
Satisfactory . . . . .	13
Satisfactory but opportunity for work lacking . . . . .	10
No earning capacity . . . . .	6
Adjustment not reported . . . . .	7

<sup>1</sup> Summarized from Arthur B. Lord, “A Survey of Four Hundred Forty-Nine Special-Class Pupils,” *Journal of Educational Research*, Vol. XXVII, No. 2 (October 1933), pages 108–114.

## WEEKLY SALARY

Range — four to twenty-five dollars

Average — approximately \$9.71

The report concludes that out of the above group 8.3 per cent are institutional problems of the type that should not have been retained in the public school; that 42.2 per cent need no supervision; that others would profit by educational and vocational guidance or general supervision; and that 13.9 per cent need family supervision.

A recommendation is made that visiting teachers should be assigned to give social, educational, and vocational guidance to special-class pupils preparing to leave school and that supervision after the individual leaves school should be continued until he is twenty-one.

*Summary of the findings.* The foregoing studies indicate that the majority of the mentally retarded find a place in unskilled and semiskilled labor, that the majority find employment for the greater part of the time, that for the most part the attitudes of employers toward them are favorable, and that their wages increase with experience. Success in employment is largely dependent on health, personality traits, and home environment. Socially the majority of the group adjust satisfactorily in the home and community, as indicated by the small percentage of delinquent records. The girls tend to marry earlier than the boys. The mentally retarded, it would appear, are a selected group whose capacities are limited but who may be fitted (1) to perform unskilled and semiskilled labor; (2) to earn wages slightly below average; (3) to take a part in homemaking; and (4) to function satisfactorily in the home, the community, and industry. Increased study of individual personalities and abilities, and improved

educational programs, will undoubtedly increase their successful adjustments to all these situations.

#### IMPLICATIONS OF THE FINDINGS FOR EDUCATION

The above findings are especially significant for education as they are taken from communities in which the schools have made a careful study and selection of the slow-learning child and have organized a program, specific in its character to meet his needs.

These findings suggest certain needs for which a plan of education for this group should aim to provide. The maintenance of health in the individual, the improvement of his environment, and the continuing development of adequate personality traits, it becomes apparent, would increase the individual's capacity to find a job and to continue at work steadily. The degree of the individual's success in industry is shown to depend to a large extent on (1) finding a job suited to his capacity; (2) the degree to which he has developed traits of self-reliance, punctuality, courtesy, industry, obedience, co-operation, steadiness, and perseverance; (3) the degree to which the home and community environment fosters the continuance and development of such traits; (4) tolerance and understanding on the part of the employer; (5) the development and maintenance of a healthy physique; and in a few cases (6) the fitness of the nature and tempo of the job to the temperament of the individual. An illustration of this last condition may be found in the fact that some individuals like outdoor work and cannot stand the noise of machinery; others can turn out piecework, while less agile individuals cannot work happily or efficiently under a piecework system. Provision for all these factors would improve industrial efficiency and at the same time serve

to increase capacity for good behavior in the home and the community and so reduce the possibility of delinquency. The responsibility of the school in all these matters must be met if the mentally retarded are to achieve satisfaction in their own lives and become acceptable or contributing members of society.

Fully five or six hours of each day, besides his weekends, are left to the individual after his work is over. It is accordingly important that he should be educated for the use of his free time as well as for a job.

Individual study and education with these goals in view would discover also those individuals who cannot be educated to meet the demands of the group and who should be placed in institutions before the age when they would otherwise have been leaving school.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Why are the results of studies of former special-class pupils of significance to education?
2. Make a topical summary of the findings of the first two studies reported in this chapter.
3. List the factors that contribute to the satisfactory adjustment of the special-class group in industry. Which do you consider the most important and why?
4. How should these factors affect curriculum building for the mentally retarded?
5. Discuss the ways in which satisfactory adjustment in industry increases capacity for good behavior in home and community.
6. Is it possible to identify beforehand and to segregate those who will not adjust satisfactorily in after-school life? Why?
7. How would you answer the question, "What is the use of spending money on the mentally retarded, since they will never make good citizens?"

8. Read the reference cited below to Fairbank's "The Subnormal Child — Seventeen Years After." Report on the conditions that contributed to the satisfactory adjustments recorded.

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## *Chapter Five*

### EDUCATIONAL OBJECTIVES

WHAT objectives should the school set up for the education of the mentally retarded? In general, these objectives should grow out of the ideal aim of all education — the development of the individual's capacity to enjoy, to share in, and to contribute to the worth-while activities of life. For although limited in their capacities, most mentally retarded children have the potential capacity to share to some degree in carrying on the normal activities of life. The majority of them can, as the previous chapter indicated, acquire social habits and attitudes, skill of hand, and working habits that will make for satisfactory adjustment in the home, in the community, and in the working world. Their limited capacities will, however, suggest adaptations of both educational goal and method. It is accordingly helpful to define specifically those goals that may be considered of peculiar importance for the mentally retarded group.

#### OBJECTIVES FOR THE NORMAL CHILD

Before considering such specific objectives for this selected group, however, the general trends in educational objectives for the normal child will be reviewed briefly.

The school today increasingly conceives its purpose in relation to the growth and development of total child personality adjusting itself to a social environment. As a step toward accomplishment of this purpose, these objectives for the elementary and secondary school

period are recognized generally by progressive public schools:<sup>1</sup>

1. Health, both physical and mental — the development of a healthy physique and of wholesome mental attitudes toward life and its problems.

2. The understanding and practice of desirable social and civic relationships — intelligent participation in family life and in community responsibilities in a co-operative society.

3. The discovery and development of individual interests and aptitudes — the recognition, and provision for the growth, of creative ability in every child.

4. The development of interests and skills for participation in worth-while activities for leisure time — the fostering of interests, appreciations, and enjoyment in varied activities as a guide to independent choices.

5. A mastery of knowledge, appreciations, and skills of the school subjects as integral parts of life experiences — a recognition of these abilities as they are a part of vital experience and conduct.

6. The development of the habit of critical thinking — the ability to recognize problems, to organize pertinent material, to examine it critically, and to arrive at unbiased judgments.

7. The development of vocational interests and efficiency, beginning in the junior high school with exploration and guidance for vocational education and including preparation for higher learning.

Although these objectives overlap, as is inevitable, since they are stated in terms of life needs rather than of knowledge and subjects, they bring into relief the school's responsibility as it is recognized at the present time.

<sup>1</sup> Adapted from *Cardinal Objectives in Elementary Education*, Committee on Elementary Education of the New York Council of Superintendents, pages 13-18 (University of the State of New York, Albany; 1929).



These statements indicate that the school today takes account of life in its entirety, that it is seeking to identify itself with more and more of life's activities, and that there is an increasing tendency to consider all possibilities for the fullest development of the individual.

#### OBJECTIVES FOR THE MENTALLY RETARDED CHILD

Objectives for the mentally retarded may be said to differ from those for the normal only to the extent that they are narrowed down to prepare the individual to fulfill specific adjustments in a limited industrial and social sphere. In other words, the mentally retarded cannot achieve so many and so varied adjustments, he cannot contribute to or participate in life so fully, he cannot live at so high a level as the normal; but according to his measure he can achieve the adjustments within his reach, he can co-operate in and contribute his share to the accomplishment of the tasks of life, and he can enjoy life at his own level of interest and accomplishment. He cannot be expected to understand the complexities of the social order, to contribute to the solution of problems, or in any way effect changes for the better. He can only be a follower. ( In so far as he is a well-adjusted, self-respecting, co-operative member of the home and community, contributing as much as he is able toward his self-support, he is doing his share. The objectives for this group, therefore, will not cover the whole scope of those set up for the normal child, but they will take into account the conditions specific to this group, as described in previous chapters. These it may be well to review here.

1. Mental development will be slow.
2. Normal standards will be more nearly attained in physical and social than in mental development.

3. Home environment provides generally inadequate opportunities for experience.

4. Hand skills are the sphere of greatest likely success.

5. Adjustments must ultimately be made chiefly in the rank of semiskilled and unskilled industry.

The first aim of all education should be to help the child react efficiently as a growing child to situations both in and out of school and to establish habits and attitudes that will continue to operate as life goes on. If such an aim is to be realized for the slow-learning child, it is particularly important that the application of all his learnings to simple life situations be made clear and that all practice tend to make this functioning of school learnings habitual. For this reason objectives for education of the mentally retarded are stated here in terms of those life activities in which the slow-learning group are most likely to participate. They are grouped under the general headings of health, tool subjects, community life, family life, leisure, and vocation.

#### PHYSICAL AND MENTAL HEALTH

Health is the first consideration for every child. It is of special consequence to the retarded child if he is to develop to his fullest capacity. His assets being limited, he can much less easily than the normal child struggle against the handicap of being physically under par in any respect. These children also come more often than do normal children from the below-average home where poor hygienic conditions are likely to exist and where the parents are likely not to have the intelligence to understand the significance of good health habits or the means to pay for correction of physical defects.

The slow-learning child, because of his inherent inability to see relationships, also understands less readily than does the normal child the relationship between the practice of habits and the consequences of practicing them. All through his habit-forming years the teacher must therefore direct him specifically in practicing health habits so that he may come finally to relate practice with consequence and experience the feeling of comfort that correct habits give. Knowledge and information about health do not suffice for the normal child, much less for the slow learner. Desirable habits of action must be inculcated through persistent practice.

Health habits and attitudes that are of first importance are those that will develop and conserve a healthy physique. The slow-learning child should learn to practice personal habits of cleanliness, of good posture, and of healthful dress — habits that experience has shown are also directly related to the development of self-respect. The child should be taught to care for his eyes, ears, and throat; to appreciate the value of well-ventilated and well-lighted rooms, of exercise in the open, and of regularity in exercise and rest; to choose and prepare healthful foods; and to observe safety rules.

Habits and attitudes of hygienic living that will aid in the maintenance and promotion of the health of others are also necessary. The child should be guided to consider the effect of his health habits on the health and comfort of those around him as well as their effect on himself. He should learn about communicable diseases and how to use community health facilities and to administer some of the steps in first aid.

The individual must also have a healthy personality. He must develop in so far as possible wholesome mental

attitudes, emotional stability, and normal social reactions. He must learn to accept easily the simple demands of life, to be interested in other people and in what is happening around him, to make an effort to accomplish tasks within his ability, to have self-respect and self-confidence, to be even-tempered, to be happy and cheerful, to be companionable, and to be considerate of others.

#### PRACTICAL WORKING KNOWLEDGE OF TOOL SUBJECTS

The mentally retarded child should be given, in so far as his ability will allow, a practical working knowledge of the tool subjects; i.e., the fundamentals of reading, number, and English, including writing and spelling. Because of his limited ability to associate ideas and experiences, he has to be specifically taught to apply these tools in even the most simple situations. The mentally retarded, much more than the normal child, must be taught to apply all the things he learns to the specific situations in life in which they function. To know how to read, how to compute, how to spell, and how to write will not suffice. The slow child must be given specific help in interpreting what he reads. He must be definitely taught how to read signs and directions; how to find information in newspapers, in bulletins, in a directory, or a magazine; how to read letters; and how to read stories for pleasure. He must be specifically taught how to use numbers in the situations in which he is most likely to need to use them — finding a certain page in his book, for example, or counting change at the grocery store, finding his gain in weight over the previous month, estimating the cost of a party, organizing teams for games and computing scores, reading a temperature graph, estimating the

value of his time on a job. One hundred per cent perfection in the daily spelling lessons does not represent satisfactory achievement unless he can use the learning he has acquired to list a grocery order, fill out a form, write a letter, or keep a diary.

#### COMMUNITY LIFE

The slow-learning individual should also be given, in so far as his ability will allow, an understanding of group and community relationships and of his part in them. This goal is concerned with the development of social concepts and orientation. The mentally retarded must be very carefully directed to an understanding of how people live together and of how activities are carried out in a community. Because his powers of association, abstraction, and generalization are limited, he does not readily sense even the most common elements in group life. He does not understand the meaning or significance of democratic government as an institution. He, however, can build up limited concepts of community living, beginning with the understanding of life and relationships in his family group and his school group. Through first-hand experience he too may learn how many people live together in a neighborhood and in a city, how the neighborhood and the city are made safe and kept clean. He may learn about the many opportunities offered for worth-while activities by the school, the church, the library, the museum, the parks, and other public institutions. He can learn to appreciate that the city must have men to manage it, to make its laws, and to see that they are carried out. He may be brought to realize that he shares with others a certain responsibility for keeping the community safe, clean, and comfortable. Through the concrete situa-

tions that he observes and experiences he may learn to sense a community as a group of people living and working together co-operatively.

He should be able, also, if possible, to transfer this conception of the community from his own to other near-by and far-away communities. Through study of his own needs for food, shelter, and clothing, the child may be helped to sense the idea of interdependence of individuals within the group and of different groups. Through study of these same needs he may be led to specific knowledge about the lives of people in other parts of the world and about man's activities of primary production, transportation, and communication.

#### FAMILY LIFE

The individual should be helped to become a worthy member of his family, contributing his share toward making the home a wholesome, satisfying center for his own life and for the lives of the other members of the group.

The mentally retarded child particularly needs to develop habits, skills, and attitudes that will make him a better member of his home group. He has often been made to feel out of place in the home because of his recognized inferiority to the rest of the group. But as he comes to feel pride and pleasure in co-operating in classroom tasks, he may gain a notion of the opportunity for useful effort in the home that will increase his self-respect and encourage better attitudes of members of the family group toward him. Through appreciation of the duties and the responsibilities of the different members of the classroom group, he may be taught to understand the sharing of responsibilities in the family group. In school he may learn, and then be encouraged

to do well in the home, simple tasks like caring for his own clothes, caring for his own room, taking care of younger brothers and sisters, keeping the yard clean, washing the dishes, or preparing the vegetables.

The girls at adolescence may acquire skills in the practices of home making and home improving, attitudes and habits in the care of younger children and the ability to choose and to make simple items of clothing and to repair them economically. They may learn how to make and to use a simple plan of budgeting. The girl from the foreign home should become familiar with methods and ways of living in American homes, while at the same time she learns to appreciate and to be tolerant of foreign ways. She may help to teach her mother the "why" of some American ways. When the mother is inadequate as a homemaker, the adolescent girl may be trained to be a source of real help to her.

The adolescent boy can also acquire skills in home making and home improvement, although to a lesser extent than the girls. He may learn how to prepare simple foods, to build fires, to keep conditions in the home hygienic, to make simple home appliances and furnishings, and to make repairs in carpentry, painting, plumbing, and electric wiring.

There is also the recreational aspect of home life to be considered in the educational program — games, reading, radio programs, and handcrafts. This phase of education for family life is more fully treated below in connection with the discussion of education for use of leisure time, but its relation to the subject of training for family life is an important one. Both boys and girls may also learn how to aid in the welfare of the home and its members through the use of such community facilities as hospital clinics, public baths, settlement

houses, organizations like the Y.M.C.A. and Y.W.C.A., and the parks.

In order to realize the objective of worthy home membership, the closest kind of relationship between what the child is doing in school and in his life outside is desirable. There may too readily be the assumption that what the child has experienced in school will be carried over into the home. For the mentally retarded special help is needed in making this transfer. The teacher should know the home conditions and the possibilities for carrying out in a particular child's home projects that have been launched in school. She should be ready to help the child to make any necessary adaptations of his school learning to his home situation.

#### LEISURE

The individual should be helped to use his leisure time profitably and happily that he may derive from it satisfaction for himself and others and thereby become an asset to his home and community. This objective is obviously directly related to those of worthy family life and community life. The individual properly and happily engaged is saved from delinquency and is an asset in whatever group he is found.

Bonser has said, "Whatever we do to occupy our leisure time is a measure of what we like to do. . . . In a very large sense, it may be said that what we enjoy is a matter of habit."<sup>1</sup> The group, therefore, should be prepared for the right use of leisure time through the formation of right habits and attitudes. The school should guide the children to experience satisfaction again and again in legitimate recreational activities so

<sup>1</sup>Frederick G. Bonser, *The Elementary School Curriculum*, pages 31 and 33 (The Macmillan Company, New York, 1920).



that they will choose these outlets as a matter of habit. They should learn the joy of good music (of listening to it, singing, and dancing to its rhythm), the delight of physical activity (of walking, swimming, and skating), the satisfaction of simple handcrafts (of sewing, dyeing, weaving) and of occupations (painting, gardening, the construction of simple furniture) that may make for home improvement. It is in physical, not mental, activity that the slow-learning group will find their recreation; so the cultivation of skill and pleasure in such activities as those suggested rather than in artistic or literary pursuits is of importance for them.

It is also important that the child learn to enjoy things with others (to be a good companion and a good friend) and to use community facilities for his recreation (the library, evening schools, club and settlement activities). Since he is typically more suggestible than the normal child, it is especially important that his leisure time be spent in an atmosphere and among persons most likely to exert a wholesome influence. He should be encouraged to turn to his church, his neighborhood settlement house, or the school for his recreation or for advice about it rather than to the first person or opportunities he meets up with. One notes here, in passing, the need for an educational follow-up worker who could direct this group out of school — both during and after their school life — not only in their vocations but also in their recreation.

#### VOCATION

The individual should be enabled to become a satisfactory and happily adjusted wage earner in unskilled or semiskilled labor and to maintain satisfactory relationships with his employer and fellow-workers.

The child should be directed in the development of habits, skills, and attitudes that will help him in so far as possible to adjust himself to a job he is capable of filling. Habits of working neatly and honestly, of caring for tools and material economically, and of being punctual, cheerful, and steady, must all be developed. The child should learn to use tools and materials skillfully and independently. He should learn about the requirements for local jobs that he may be able to fill and the amount of remuneration that may be expected from different kinds of jobs. Confidence and self-respect should be established in relation to the kind of job he is able to fill.

The child should also be given some understanding of how man is constantly improving his uses of raw materials and his ways of doing things, and some idea of the changes that have come about in industry and living as a result of these improvements. He should be given some simple appreciation of how men work together, of the relationship between workers and employer, and of the contributions of each to the whole.

Those girls who are reliable and are capable of acquiring the habits and skills needed in homemaking should be directed to domestic service.

If the right kinds of habits, skills, and attitudes are acquired, the individual will be prepared to make adjustments to different kinds of jobs, although he may have specific new processes to learn in each case. If he has good steady habits, uses his hands skillfully, and knows something about machines, the boy may in a short time learn the manipulations and make the necessary adjustments to feed a printing press or wind coils in a telephone factory, or the girl to fold paper boxes or baste sleeves.

As was suggested in Chapter IV,<sup>1</sup> success in vocational life depends largely on health, personality traits, skill, good working habits and attitudes, and stability in the home. By seeking to develop these important assets we may hope to give the mentally retarded child his best preparation for vocational effectiveness.

#### MEETING THE PRESENT NEEDS OF THE INDIVIDUAL

These, then, are the outstanding objectives to be sought for in educating the mentally retarded: mental and physical health; a practical working knowledge of the tool subjects; worthy home and community life; worthy use of leisure; and adjustment in industry. The group may never attain these goals in their entirety, but the school cannot afford to strive for less if its task is to be the development of the individual to the fullest extent of his capacity to enjoy, to share in, and to contribute to the worth-while activities of life.

Throughout the whole program of striving for these educational goals with the slow-learning group, repeated emphasis must be given to the necessity for meeting the present needs of the individual. Much of the school's effort in the past has been ineffective because the child failed to relate the knowledge, skill, or habit learned in school with a present need. Too often it was learned for the teacher's sake and not as a better way of responding in a real situation. Through lack of application and use, much of it failed to be retained and more of it was valueless. For the mentally retarded child it is of very especial importance that everything must be learned in a situation that gives it meaning and relates it to a present need. John wants to make a boat; in the library he can find a diagram of the model. He wants

<sup>1</sup> Pages 51 to 53.

a good adventure story, or he wants to identify a new butterfly; the library will satisfy these needs. He learns to use the library, to consult the children's librarian, the card catalogue, and so forth. The library habits that are built up must serve John's immediate needs. But his new learnings and habits must in every case be so conceived and directed that they will come to function in other situations and continue so to function as he gets older.

#### SUMMARY

The school life of the mentally retarded child must be so planned as to include experiences that stimulate and possess the means of satisfying worth-while present needs, and that also stimulate progress toward the ultimate significant goals of his education.

Every such educative experience should be measured by the following criteria :

Does it promote health, both mental and physical ?

Does it promote a practical application of the tool subjects ?

Does it promote better home membership ?

Does it promote better group and community living ?

Does it promote a better use of leisure time ?

Does it promote desirable working habits and attitudes ?

Any experience that promises the advancement of one or more of these needs while it creates and satisfies the pupil's immediate needs may safely be considered a worth-while one to develop in the classroom.

The second part of this book will concern itself with the description of a program that attempts to fulfill these requirements.

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### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Review the list of objectives of the education of normal children outlined in this chapter. Do you consider it satisfactory? Why?
2. Is it preferable to discuss objectives for the education of mentally retarded children in terms of life's activities or functions or in terms of the development of the child? Give the reasons for your answer.
3. How may "education for a changing civilization" affect objectives for the education of the mentally retarded?
4. Discuss how general home conditions in the mentally retarded group may hinder the attainment of each educational objective outlined.
5. State ways in which the school may direct its work to overcome these hindrances.
6. Summarize your understanding of three of the objectives for the mentally retarded that are discussed in this chapter. Consider the definition of each; the reasons why it is included; the practical activities to be realized from it.
7. Give two incidents to illustrate Bonser's statement that "whatever we do to occupy our leisure time is a measure of what we like to do."
8. Give from your own experience three instances in which meeting the child's present need has prepared him to meet a future need.

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PART TWO

A SCHOOL PROGRAM FOR THE  
MENTALLY RETARDED

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## Chapter Six

### ORGANIZATION OF SPECIAL CLASSES

#### INTRODUCTION

THE mentally retarded comprise a group of children whom experience has shown to have definite potential abilities — capacity for adjustment in the simple walks of life and capacity for contributing in some degree to the work of the world if they are properly directed and educated. A knowledge of these and other likenesses of the mentally retarded to the normal child, of the characteristics of his development at different ages, of the basic principles of psychology and philosophy which underlie his education, and of his place in the community furnish the background for consideration of an adequate school program for him.

*Failure of the mentally retarded to keep pace with the normal child.* All the children of all the people enter school at seven years of age or earlier.<sup>1</sup> This means that the mentally retarded child begins his school career along with normal children on the as yet untested assumption that he has ability equal to that of other children and that he will succeed equally well.

But from the beginning the mentally retarded child is poorly adjusted in school. When he comes into this new environment where the standards of behavior are new — different from those of his home because they evolve from the fact that large groups of children are living and working together — he fails to make satisfactory adjustments. Because of his limited innate

<sup>1</sup> There is a negligible per cent too incompetent to have a trial even at seven years.

ability, the material in this environment does not readily stimulate him to investigate, to question, or to make deductions. In the kindergarten he is accordingly slow to participate in games, music, play, and conversation. Then too he lacks the ability to acquire certain skills expected of all in his school group. In the first grade, where success depends on learning to read, he cannot keep pace with the normal child. Continued effort to bring him into conformity only emphasizes his inadequacies and causes failure and repetition of grades. This failure and repetition often result in listlessness, indifference, idleness, carelessness, feelings of inadequacy, and dejection, or aggressive attitudes of interference with others, attention getting, or destructiveness—in short, in a series of unwholesome attitudes. Thus the slow-learning child working in the traditional grade organization fails to experience the success and satisfaction that are due every child in his school life.

*How schools are meeting these conditions of failure.* Many communities have recognized this problem and as a result are providing a specialized organization better equipped to meet the needs of this type of child than are the regular grades.<sup>1</sup> However, owing to such conditions as lack of finances, building space, equipment, and trained teachers, there are many communities unable to provide a special-class program. Others can provide classes for some of the group only, usually the most outstanding cases. A comparatively small number of towns, villages, and rural communities plan an adapted program for the individual child which can be carried on

<sup>1</sup> See Chapter I, page 5. This book does not concern itself with the extent of the provision for special classes and schools. For this information refer to A. O. Heck, *Special Schools and Classes in Cities of 10,000 Population and More in the United States* (Bulletin No. 7 of the Department of the Interior, Washington, D. C., 1930).

in the classroom.<sup>1</sup> Whether a special-class organization is possible or whether conditions require that the retarded child work in the classroom beside normal children, it is desirable that all slow-learning children be recognized at an early age and be provided with suitable educational opportunities from the beginning. Such a program could reasonably be expected to increase greatly the number of individuals with good habits, good attitudes, self-confidence, and self-reliance to carry on to the limit of their ability in the home, the school, and the community. As child-study and child-guidance facilities increase, and as schools grow to appreciate child development rather than fixed and overexacting standards as a goal, the ideal program may be more nearly approached.

#### PERSONNEL OF SPECIAL-CLASS GROUPS

Recognition of and provision for the mentally retarded group should be thought of as an integral part of a general school program to understand all children as individuals and to provide equal opportunities for all according to their respective abilities. All children, even those who learn slowly, have abilities that can become assets in their sphere of life; and the purpose of the school program is the development of those abilities. If a community views the school program in this light, there is no stigma attached to classes designed to foster such development in the case of children with special difficulties or to the children who are selected for membership in these classes.

<sup>1</sup> Arnold Gesell, *The Retarded Child: How to Help Him* (Public School Publishing Company, Bloomington, Illinois; 1925). *Individual Instruction of Subnormal Children in the Rural Schools of Connecticut* (State Board of Education, Hartford, Connecticut; 1932).

*Make-up of special classes in a city system.* Special-class organizations are ordinarily of an ungraded type, receiving children of various ages and from various stages of their school careers with a resulting diversity in background and experience. Classification and organization of groups depend to a large degree on the number of pupils to be cared for and the facilities for grouping children of similar ages, abilities, and interests in the particular school system concerned. In school systems of from ten to forty thousand pupils, enrolling respectively about two to eight hundred special-class pupils, there is an opportunity for classifying children of similar chronological, social, and mental ages. The organization of special classes in the school system of Rochester, New York, represents such a system and is fairly typical of what is found in the larger communities.

There are several elements that make the grouping of children of nearly the same ages and interests possible in the special classes in Rochester. The elementary and junior high schools enroll approximately 35,500 pupils; the special-class organization cares for about seven to eight hundred mentally retarded pupils. There are a sufficient number of classes to care for virtually 95 per cent of all the mentally retarded in the schools. Services are available of a Child Study Department which makes careful diagnosis and recommendations for treatment of individual children, thus guiding the proper placement of children in groups most conducive to their individual growth. There is effective co-operation among principals, visiting teachers, and special-class teachers in securing parents' consent to the placement of children in such classes. Programs in the various classes are so obviously suited to the children's needs that where it is necessary parents generally are willing to have their children go out of their own school dis-

strict to attend them and the city provides carfare or bus transportation for this purpose.

Table VI shows the typical make-up of the Rochester special classes. These groupings necessarily show some overlapping in abilities, because of differences in ability at the same chronological-age level, variations in numbers of slow-learning children in different school districts, and occasional impracticability of transporting a pupil to the most suitable school group.

TABLE VI

ORGANIZATION OF CLASSES FOR THE MENTALLY RETARDED  
(I Q. RANGE FROM 50 TO 75) IN ROCHESTER, NEW YORK

	CHRONOLOGICAL- AGE RANGE IN YEARS	MENTAL-AGE RANGE IN YEARS	NUMBER OF YEARS RE- TARDED	GRADE ABILITY
Pre-adolescent <sup>1</sup>				
Primary . . .	8 to 11 or 12	4 to 8	2 to 5	Kdg to 3
Intermediate (mixed or boys)	11 to 13 or 13½	7 to 9	3 to 5	2 to 4
Adolescent Boys' or girls' pre- vocational classes <sup>2</sup> . . .	13 or 13½ to 16	8 to 10	3 to 6	3 to 5

A detailed picture of the range of ages and abilities of pupils in three of Rochester's representative special classes for the mentally retarded may be obtained from a study of Table VII. The classes pictured are actual

<sup>1</sup> Many school systems classify into groups of adolescents and pre-adolescents. In Rochester the primary and intermediate classes take care of most of the pre-adolescent group and the prevocational classes of the adolescent group. Progress from one class to another depends not on accomplishment alone but on chronological age, mental ability, social interests, and physical maturity as well.

<sup>2</sup> There are two schools enrolling boys from 13½ to 16 years. The girls are enrolled in classes in the elementary-school building.

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representative groups in one elementary school. The class is in the home school district of the majority of the children; about 15 per cent of the pupils come from neighboring districts.

TABLE VII

PUPIL PERSONNEL OF THREE REPRESENTATIVE SPECIAL CLASSES IN ROCHESTER, NEW YORK, A COMMUNITY ENROLLING 35,287 ELEMENTARY AND JUNIOR HIGH SCHOOL PUPILS AND 787 SPECIAL-CLASS PUPILS

RANGE IN AGES AND APPROXIMATE GRADE ABILITY	DISTRIBUTION OF CHRONOLOGICAL AGES			DISTRIBUTION OF MENTAL AGES			DISTRIBUTION OF EDUCATIONAL AGES		
	PRI- MARY CLASS	INTER- MEDI- ATE CLASS	GIRLS' PRE- VOCATION- AL CLASS	PRI- MARY CLASS	INTER- MEDI- ATE CLASS	GIRLS' PRE- VOCATION- AL CLASS	PRI- MARY CLASS	INTER- MEDI- ATE CLASS	GIRLS' PRE- VOCATION- AL CLASS
5 to 5-11 (Kindergarten to pre-primary)	0	0		3	0	0	7		
6 to 6-11 (First grade)	0	0		13	1 <sup>1</sup>		9		1 <sup>2</sup>
7 to 7-11 (Second grade)	0	0		3	3	1	3	7	2
8 to 8-11 (Third grade)	9	0			11	6		11	7
9 to 9-11 (Fourth grade)	4	0			3	8			11 <sup>3</sup>
10 to 10-11 (Fifth grade)	6	1 <sup>4</sup>				6			
11 to 11-11		5							
12 to 12-11		10							
13 to 13-11		2 <sup>5</sup>	4						
14 to 14-11			11						
15 to 15-11			4						
16 to 16-11			2						
Total	19	18	21	19	18	21	19	18	21

<sup>1</sup> John, chronological age 12-6, I.Q. 52.

<sup>2</sup> Sarah, chronological age 14-6, I.Q. 50, hearing defect, physically immature.

<sup>3</sup> Three of these pupils have fifth-grade ability in some subjects.

<sup>4</sup> Jimmie, age 10-10, had attended the primary class for three terms.

<sup>5</sup> Mike, age 13-1, I.Q. 52, physically and socially immature. Rose, age 13-2, to be advanced to the girls' class when there is a vacancy.

The distributions indicate that there is the least overlapping between classes in chronological age — in physical maturity. In mental development and academic ability there is greater overlapping.

Those pupils who are among the least capable mentally are placed in groups best suited to the level of their physical and social maturity. For example, Sarah, a fourteen-year-old girl with seven-year mentality and a hearing defect, although having no ability along academic lines, develops more effectively in a group of girls of about her own degree of physical maturity, where she can enter into games and rhythms and participate in simple home economics practices and other activities suited to her age, than she does with younger children of mental ability more nearly like hers. On the other hand, thirteen-year-old Mike is left in the intermediate class with younger children of his mental level because physically and socially he is immature.

These distributions suggest that the larger the school population the greater is the opportunity to form groups showing a minimum of diversity of physical, social, mental, and educational abilities.

#### MAKE-UP OF SPECIAL CLASSES IN A SMALL COMMUNITY

In the small community the main purpose of the special class or classes is obviously to serve the most serious cases of retardation, but borderline or dull-normal pupils who have become problems to the regular classroom teachers are also often included to simplify the regular work of the school as well as to keep up the quota of attendance in the special class. This class will consequently be less homogeneous in its make-up than that in the larger community. A community where the numbers of slow-learning are small has a special diffi-



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culty and responsibility in selection and organization from the standpoint of both the individual and the group.

Table VIII indicates the wide range in chronological age, intelligence, and grade ability in representative special classes in five small communities. Here the young incapable child is placed with the physically mature adolescent. In the first three groups dull-normal pupils are also included. Town "E" shows the group most nearly homogeneous according to measurable range, having only one ten-year-old, no child with I.Q. of 80 or above, and all having at least first-grade ability in reading and other important skills.

TABLE VIII

PUPIL PERSONNEL OF SPECIAL CLASSES IN FIVE TOWNS WITH A SCHOOL POPULATION OF FROM FIVE HUNDRED TO TWO THOUSAND

RANGE OF CHARACTERISTICS	TOWN A (18 Pupils)	TOWN B (14 Pupils)	TOWN C (18 Pupils)	TOWN D (14 Pupils)	TOWN E (17 Pupils)
Chronological Ages:					
7 to 8-11	2	1	1	2	0
9 to 10-11	5	0	1	5	1
11 to 12-11	3	5	7	4	2
13 to 14-11	6	6	6	1	8
15 to 16-11	2	2	3	2	6
I.Q.'s:					
50-59	0	3	3	2	1
60-69	7	7	6	7	8
70-79	6	3	6	3	8
80-89	4	1	2	0	0
Unknown	1		1	2	
Educational Ability in Terms of Grade Standards	1-6	1-5	1-5	Pre-primary to 5	2-6

Table IX gives the make-up of one class in a school community of 2538 elementary and junior high school

pupils which maintains three special classes enrolling in all thirty-nine pupils. This class shows a wide range in chronological, mental, and educational ages. The two other classes in this community are in one school building and draw from neighboring school districts, thus making it possible to arrange groupings of children with less diverse abilities and interests than are those of the group pictured. The chronological-age ranges for these two classes are respectively from 9-2 to 14-5 and from 12-11 to 16-6. The first of these groups carries on first- to third-grade work and the second third- to fifth-grade work. The classification of these three groups is commendable in that two of the groups are arranged with fair homogeneity, and wide diversity occurs in only one group.

TABLE IX

PUPIL PERSONNEL OF ONE OF THREE SPECIAL CLASSES IN A COMMUNITY ENROLLING 2538 ELEMENTARY AND JUNIOR HIGH SCHOOL PUPILS

CHRONOLOGICAL-AGE RANGE IN YEARS AND MONTHS	NUMBER OF PUPILS	MENTAL-AGE RANGE IN TERMS OF I.Q.'s	NUMBER OF PUPILS	EDUCATIONAL-AGE RANGE IN TERMS OF GRADE LEVELS	NUMBER OF PUPILS
5 to 6-11	0	40-49	2		
7 to 8-11	1	50-59	2	1	5
9 to 10-11	5	60-69	7	2	3
11 to 12-11	3	70-79	4	3	3
13 to 14-11	3			4	2
15 to 15-11	3			5	2
Total	15		15		15

*Advantages of grouping children of similar ages and interests.* An examination of Tables VIII and IX suggests that in many cases the range of levels of physical, mental, and educational development in any one group is sufficiently great to produce a wide diversity of interests and of probable responses to any given

appeal. From the standpoint of teaching skill, equipment, curriculum, and methods such a situation is far from ideal. An effort should be made to group together children of similar learning ability, physical maturity, and social interests. Some teachers are especially gifted in teaching younger children, others in teaching adolescents. The young child needs play situations that provide language and reading stimuli. Adolescents need vocational direction. Then too it is almost impossible for one room to provide the variety of equipment and material needed by pupils of many different ages or interests. For instance, the young child needs apparatus and large toys for play, an abundance of manipulative material, and space in which to use it; the older boy needs a workbench and room to lay out work; the older girl needs a cutting table and a sewing machine. Even a very skillful teacher finds her time and resources taxed almost beyond their limits by the demands of a very diversified group. But she may be expected even so to provide more help to her slow-learning pupils than could the teacher in a regular grade organization that demands the same standard of accomplishment from all children.

*Modifications of the special-class plan for the small community.* If in the small community with only one special class there are a flexible grade organization and curriculum, rooms equipped for activity, and an understanding principal and teacher, it may be better to allow the young mentally retarded child to remain in the regular primary grades rather than to assign him to a special class. In the regular primary group he can enter into group activities — play, stories, music, and construction — and have an adapted program for his reading and number work. He may also be allowed to go on from grade to grade, not because he has “passed” the

subjects of any grade but because each year he has achieved what he was capable of achieving and has developed physically and socially. His specially adapted program may each year be continued from the point where it left off the year before. When he is eleven or twelve years old and his physical size and the content difficulty of the work of the grade make sharing in class activities difficult or awkward for him, he may be placed in the special class where program, equipment, and curriculum are suited to his mental and social development. Where such provision is made in the regular grades for the slow-learning primary-age children, one special class might well be made to care for the slow-learning adolescents who must attend school until they are fifteen or sixteen but who are misfits in the regular grade rooms. Such a plan should also relieve the big boy and girl of the stigma and humiliation that inevitably attend his being in a class with younger children.

Charles S. Berry<sup>1</sup> suggests for the small community a "modified special class" to include 5 to 15 per cent of the slow-learning. Five or six slow children may be selected from each of the first four regular grades and be assigned to the one of the four grade teachers who is the most interested in the exceptional child and who by temperament and study is best qualified to work with him. The normal children originally enrolled under her may then be distributed to the other three teachers. The job of the teacher with the selected group would be to assist children to return to the regular grade organization when possible, and to continue to carry those who need the completely specialized program until they can enter the junior high school with

<sup>1</sup> Charles S. Berry, "Helping the Mentally Retarded Child," *The Nation's Schools*, Volume XIII, No. 5 (May 1934), pages 27-32.

an adapted program. There is no report that the plan has been tried out in any community.

There are two communities of average or above-average economic status known to the writer where the mentally retarded children (none of whom have I.Q.'s below 65) are registered in the regular grades and a special teacher is assigned to them as a tutor. They participate in the grade activities except in the tool subjects, social studies, and some industrial arts, for which they report to the special teacher. A few normal children who need special help in some subject have also requested and been granted permission to go to the special teacher for help. The schools report that the pupils and parents consider assignment to the special teacher a privilege.

Small communities in the state of Minnesota, where the special-class I.Q. range is from 50 to 80, are experimenting with various plans for caring for their slow-learning pupils. One community reports a scheme of "give and take" with the regular grades, in which some of the special-class children attend art, health, and social studies classes with the grades, and children from the grades in need of special remedial work go to the special-class teacher for it.

As schools come to recognize individual differences and the needs of individual children and to develop their programs of education on this understanding, plans for caring for the mentally retarded will readily be developed or modified to fit the needs of each particular community.

*Provision for education of the slow-learning in the rural community.* For the slow-learning child in the rural school no special class is accessible. What can be done for him? In the state of Massachusetts, where there is a state-wide program for the identification and educa-

tion of retarded school children,<sup>1</sup> such recommendations are made for individual programs as "placing in a grade suited to mental age," "coaching in special subjects," "more work of a manual nature."

A plan for individual instruction for the mentally retarded was tried out by the state board of education in the rural schools of Connecticut in 1930-1931.<sup>2</sup> Diagnoses of each pupil's ability in reading, spelling, and arithmetic were made, and the regular teachers were instructed how to carry out an individual program for him. The plan allowed the child to participate in group activities but to receive individual tutoring in the school subjects. Special interests like drawing, music, and science were encouraged and utilized as a means of developing growth. Measurable improvement resulted.

Experience is proving that the mentally retarded child can enjoy some success and growth in the regular class of the school where the teacher understands the individual child and makes adaptations of her teaching program to his needs.<sup>3</sup>

*Variable conditions affecting the special-class program.* Much of the character of the special-class organization in a city community evolves from the fact that children of different ages and school levels are admitted into its ranks whenever occasion arises. Original placements and shifts from one special group to another are all

<sup>1</sup> *Regulations for Determining the Number of Children Three Years Retarded in Mental Development*, page 67 (Department of Education and the Department of Mental Diseases, East Gardner, Massachusetts; 1931).

<sup>2</sup> *Individual Instruction of Subnormal Children in the Rural Schools of Connecticut* (State Board of Education, Hartford, Connecticut; 1932). See also Arnold Gesell's *The Retarded Child: How to Help Him* (Public School Publishing Company, Bloomington, Illinois; 1925).

<sup>3</sup> Charles Scott Berry, *How the Teacher May Help the Exceptional Child* (Bureau of Special Education, Ohio State University, Columbus, Ohio; 1933).

matters of individual consideration; there is nothing fixed about the character or ability of the personnel of any one class from year to year or from term to term. Periods of attendance in a special group may vary widely for the individuals in that group. The only factors controlling the membership of the group are the specific needs of the individuals, determined by thoughtful consideration of all the various phases of their development. This situation is very different from that of the usual grade organization which accepts at one time large groups of children six or seven years old, sets for them predetermined standards, gives them a definite program, and promotes them to succeeding grades at regular intervals. The special-class organization may receive at any time in the year pupils of any age and of any amount of school experience. The range and level of the abilities of a class at any one time can consequently not be foretold.

This fact means that the program of work for any one special class cannot be a definitely prescribed one. It will vary from term to term and from class to class. The standards and the subject-matter goals for each class must be derived from the capacities and needs of the children who are to be cared for.

These conditions — the irregularity of pupil placement as to age of pupil and time of school year; the diversity in abilities and background in the group; and the lack of a set time for certain expected accomplishments of abilities, skills, and habits, for rating those accomplishments and for carrying out promotions as in the regular grades — are present in every special-class organization. They must be taken into consideration in planning an effective progressive program of education for the child from the time of his entrance to a special class to the time of his withdrawal from school.

Study of an actual situation may illustrate the ways in which these conditions influence the planning of a program in a city system.

A STUDY OF THE PERSONNEL OF SPECIAL CLASSES IN  
ROCHESTER, NEW YORK

A study was made of all children enrolled in special classes in Rochester, New York, on the first of November, 1929, to determine their age at entrance to school, age at entrance to special class, length of time in grade before entrance to special class, length of time in special class, age ranges in individual classes, and percentages of pupils falling at different intelligence quotient levels.

The results of this study are shown in Tables X and XI.

*Length of attendance in special class.* Some of the significant findings of Table X are as follows. Out of 318 primary and intermediate pupils, with chronological ages from 7 through 12 years, 39 per cent entered the special class during their eighth year or earlier and 61.6 per cent entered during their ninth year or earlier; out of 262 boys in boys' special classes, with chronological ages approximately 12 to 16 years, 27.8 per cent entered during their ninth year or earlier and 43.8 per cent during their tenth year or earlier; out of 205 girls in girls' classes, with chronological ages from 13 to 16 years, 31.3 per cent entered during their ninth year or earlier and 39.6 per cent during their tenth year or earlier.

The figures in Table X suggest that if all these children remained in school until they were sixteen years old, 61.6 per cent of the primary and intermediate group would have had seven years or more in special classes; as many as 39 per cent would have had eight years or



TABLE X. DISTRIBUTION OF AGES AT ENTRANCE TO SPECIAL CLASSES OF THE 785 PUPILS IN THE SPECIAL CLASSES OF ROCHESTER ON NOVEMBER 1, 1929

AGE GROUP	PRIMARY AND INTER-MEDIATE CLASS		GIRLS' PREVOCATIONAL		BOYS' INTERMEDIATE AND PREVOCATIONAL		ALL SPECIAL CLASSES	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
6 to 6-11	9	2.8 <sup>1</sup>	1	.5	1	.4	11	1.4
7 to 7-11	33	10.4	8	3.9	12	4.4	53	6.8
8 to 8-11	82	25.8	19	9.3	30	11.5	131	16.7
Total 6 to 8-11	124	39.0	28	13.7	43	16.3	195	24.9
9 to 9-11	72	22.6	36	17.6	30	11.5	138	17.6
Total 6 to 9-11	196	61.6	64	31.3	73	27.8	333	42.5
10 to 10-11	70	22.0	17	8.3	42	16.0	129	16.4
Total 6 to 10-11	266	83.6	81	39.6	115	43.8	462	58.9
11 to 11-11	36	11.3	24	11.7	44	16.8	104	13.2
12 to 12-11	9	2.8	34	16.5	50	19.1	93	11.8
Total 6 to 12-11	311	97.7	139	67.8	209	79.7	659	83.9
13 to 13-11	4	1.3	38	18.5	26	9.9	68	8.7
14 to 14-11	0	0	19	9.3	16	6.1	35	4.5
15 to 15-11	0	0	9	4.4	1	.4	10	1.3
Total 6 to 15-11	315	99.0	205	100.0	252	96.1	772	98.4
Unknown	3	1.0	0	0	10	3.9	13	1.6
Total	318	100.0	205	100.0	262	100.0	785	100.0

<sup>1</sup> Read as follows: 2.8 per cent of the 318 pupils in the primary and intermediate special classes on November 1, 1929, had entered the special class at or between 6 and 7 years of age; 10.4 per cent had entered at between 7 and 8 years; etc.

TABLE XI. NATURE OF DISTRIBUTION OF LENGTH OF SCHOOL ATTENDANCE FOR VARIOUS AGE GROUPS IN SPECIAL CLASSES.  
DATA FROM STUDY OF 785 PUPILS IN SPECIAL CLASSES IN ROCHESTER ON NOVEMBER 1, 1929

CLASS	NATURE OF DISTRIBUTION	CHRONOLOGICAL AGE	AGE AT ENTRANCE TO FIRST GRADE	LENGTH OF SCHOOL ATTENDANCE (in school terms and months)		
				IN REGULAR GRADES	IN SPECIAL CLASS	TOTAL
Primary and Intermediate . . . . .	Total range	7 to 13-0 <sup>1</sup>	6 to 11-0	From less than 1-0 to 14-0	From less than 1-0 to 12-0	From less than 1-0 to 17-0
	Lower quartile	10-3	6-7	3-4	1-4	5-3
	Medium	11-5	7-5	5-4	3-3	8-3
	Upper quartile	12-5	7-11	8-4	4-5	10-4
Boys' Intermediate . . . . .	Total range	11 to 15-0	6 to 11-0	From less than 1-0 to 14-0	1-0 to 19-0	4-0 to 20-0
	Lower quartile	12-10	6-5	6-3	2-5	12-3
	Medium	13-6	7-11	8-4	5-4	14-3
	Upper quartile	13-9	7-8	11-4	8-4	15-4
Girls' Prevocational . . . . .	Total range	12 to 16-0	Below 6 to 11-0	From less than 1-0 to 18-0	1-0 to 19-0	3-0 to 20-0
	Lower quartile	14-7	6-6	5-3	3-4	12-4
	Medium	14-10	7-1	8-3	5-5	15-4
	Upper quartile	15-6	7-6	12-3	9-4	16-4
Boys' Prevocational . . . . .	Total range	13 to 16-0	6-0 to 4-0	1-0 to 17-0	1-0 to 15-0	5-0 to 20-0
	Lower quartile	14-5	6-4	4-1	3-3	13-4
	Medium	15-2	6-10	7-3	7-2	15-4
	Upper quartile	15-9	7-9	10-3	10-1	18-5

<sup>1</sup> Read as follows: The chronological-age range of pupils in the primary and intermediate classes at the time of the survey was 7 to 13 years; the middle 50 per cent of these pupils ranged from 10 years 3 months to 12 years 5 months in age, they had entered school at between 6 years 7 months and 7 years 11 months of age, and had had between 5 terms 3 months and 10 terms 4 months of schooling — from 3 terms 4 months to 8 terms 4 months in regular grades and from 1 term 4 months to 4 terms 5 months in special classes; one fourth of the pupils were less than 10 years 3 months old, etc.

more ; as many as 43.8 per cent of the boys and 39.6 per cent of the adolescent girls would have had six or more years. That is, the special-class organization in Rochester is responsible for a considerable number of its pupils for six to eight years of their school experience.<sup>1</sup>

*Varying amounts of grade experience and long school attendance.* Long periods of school attendance with varying amounts of grade experience demand that emphasis in the special class should be placed on the all-round development of the individual child. The findings of Table XI indicate that the majority of the special-class pupils studied had entered the first grade a year later than normal children and that they had had varying amounts of grade experience before entering the special class. Fifty per cent of the primary and intermediate special-class pupils had spent at least 5 terms and 4 months in the grades ; 50 per cent of the intermediate boys and prevocational boys had spent respectively 8 full terms and 4 months in the grades and 7 terms and 3 months ; 50 per cent of the prevocational girls had spent 8 terms and 3 months in the grades.

When length of time spent in the elementary grades and the special class was totaled, it was surprising to note the long school experience of these children who, measured by the standards of normal grade progress, had accomplished so little. It was found that of the children placed in primary and intermediate groups, 50 per cent had already attended grades and special classes for at least 8 terms, which is equivalent to the time spent by the normal child in the first four grades. Of the intermediate and prevocational pupils, 50 per cent had

<sup>1</sup> Out of the twenty-five cities investigated with population of 100,000 or over, twenty reported that children of eight years or younger might be enrolled in special classes. See *Special Education in the United States* (Report of Child Study Club, Board of Education, Rochester, New York ; 1928).

attended 14 or 15 terms, equivalent to the time the normal child has spent in school when he is ready for his eighth year of schooling, or the second year of junior high school. These figures indicate the length of the schooling of the slow-learning child, particularly the length of his period of failure before he enters the special class. They show in a striking way the length of time during which he is struggling to acquire the simplest rudiments of an education. They suggest that our common practice of measuring progress in terms of grade accomplishment, labeling the stages as 1B, 1A, 2B, 2A, etc., tends to give a distorted picture of the true situation. The length of time the child had struggled to attain the stage at which we find him is thereby obscured. The fact that a child can do 3B work means little unless we realize just how long it has taken him to attain this ability.

The thought is suggested by this fact that during the long period of schooling of the slow-learning child there are many things he might have learned of greater value than those we can measure and label as 3B or 3A accomplishments. Realization of the great waste of forcing the slow child to spend undue time on what he is so ill-fitted to learn, while we neglect to give him that special help he needs in making those vital adjustments the normal child may make with little help, suggests that the emphasis in our education of the slow-learning should be on the development of the child as a social personality, growing up to a better understanding of life and to some share, however great or small, in the activities of the school, home, and community. Efforts toward and estimation of progress should always be determined in relation to the all-round development of the child and not solely on the basis of his grade level of achievement in the school subjects. Specific attention

should be given to his development in health, in school, home, and community participation, and in desirable working habits and attitudes.

The schools must consider seriously the problem of utilizing to much greater effectiveness than they now do the long period of time the handicapped child is spending in the classroom.

The fact of long school attendance also points to the need of the adolescent boy and girl fourteen to sixteen years of age to be with others of his or her own age. The fourteen- to sixteen-year-old normal boy and girl are in junior or senior high school with their own age group. The mentally retarded pupil of this age, after an equally long period of attendance and effort, is often detained with young children in an elementary school. The effect on his whole morale is easily imagined. If the junior high school is not organized to care for these children in groups of their own age,<sup>1</sup> then an adolescent school should be organized for them,<sup>2</sup> or at least a center should be established in an elementary school building where the work can be organized with appeals to the interests of adolescents. The special class in the small community, as was suggested before, might be organized entirely to serve the adolescent, the younger slow-learning child being given special care in the grade group until he is eleven or twelve years of age.

*Distribution of special-class pupils in I.Q. groups.* Table XII indicates that the majority of special-class children are in the highest of the three ability groups represented in the Rochester special classes. As many

<sup>1</sup> Junior high schools in Oakland, Berkeley, and Los Angeles, California, enroll adolescents of all abilities except the most incapable who cannot acquire any background in the tool subjects.

<sup>2</sup> See Table VI, page 83, showing the organization of special classes in Rochester, New York.

TABLE XII

I.Q. LEVELS OF 787 PUPILS IN SPECIAL  
CLASSES IN ROCHESTER, NEW YORK

I Q LEVEL	PER CENT OF PUPILS
66-75	61
55-65	32
50-55	7

as 61 per cent of the special-class children studied in the Rochester survey were shown to have I.Q.'s of between 75 and 66. Thirty-two per cent fell in the group having I.Q.'s of between 65 and 55, and only 7 per cent between 55 and 50. This fact suggests the importance of emphasis on the needs of the more capable children in the group rather than on those of the incapable. Too often in the past reference to and plans for the slow-learning group have been made with the child with an I.Q. of 50 to 60 in mind, rather than the child with an I.Q. of 65 or above. Consequently too much has been thought and said about the incapacities of the mentally retarded, which are particularly conspicuous at the lowest I.Q. levels, and not enough about their abilities, which are more readily discoverable at the higher levels. The program for the slow-learningshould of course not be planned to meet the ability of any one level exclusively, but it should provide opportunity equitably for all levels. The facts of relative sizes of I.Q. groups will then suggest emphases that have generally been neglected.

*A progressive and continuous program for the individual.*  
As has already been stated, there is no set pattern of progress or success for a child in the special class and no set time for expected accomplishments and promotions

rate and that will relieve the necessity of grade promotions at the expiration of certain term limits. As schools make possible such articulate and continuous pupil progress, the traditional "grade" and "promotion" systems will give way to a more satisfactory plan based on understanding of the continuous growing nature of child development.

#### CONCLUSIONS

The facts presented in this chapter suggest certain definite conclusions regarding a program of education for the mentally retarded.

First, it is important to discover and provide for the handicapped child at as early an age as possible, before habits related to failure are established.

Second, because of the diversity of background in the school experience of the mentally retarded, the teacher should know as much as possible of the school history of each individual pupil — i.e., length of his school attendance, grade repetitions, and the personality adjustments he has made under those conditions.

Third, the program for the slow-learning in either the grade or special class must be flexible so that the individual child may be one of a group but work at his own level of accomplishment.

Fourth, children of similar ages, abilities, and interests must be grouped together insofar as possible so that the program in any one class can be suited to the physical maturity and the mental and social development of the individuals in the group, with the possibility of adjustment from year to year as they attain certain stages of maturity and development.

Fifth, emphasis must be focused on the all-round growth and development of the child for each year he is

in attendance at school rather than on his accomplishment in terms of grade levels.

Sixth, the program must emphasize the educational possibilities of the large percentage of pupils who fall at the higher I.Q. levels without losing sight of the needs of the less capable minority.

Seventh, a progressive, well-integrated program must be so built up step by step from the time of school entrance to at least the limit of compulsory school attendance that the child will be helped to work wholeheartedly toward definite standards and accomplishments and to realize his progress from week to week and from year to year.

These inferences suggest needs that an education committed to compulsory school attendance must meet—the adequate identification of the mentally retarded child and the planning of a suitable curriculum and suitable methods for his education.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. List all the advantages you can think of that the special-class organization in a city system has over the organization in a small community.
2. Describe an informal school set-up in a small town and discuss ways of adapting it to the needs of the younger mentally retarded in the primary grades.
3. Cite some cases of pupils you know who are up to grade in accomplishment but who are physically and socially immature. Describe their behavior and interests.
4. Explain how a study like the one developed in Rochester, New York, would help the superintendent and teachers of any community.
5. The findings presented in this chapter argue for earlier placement of special-class pupils. Do you agree with this statement? Defend your answer.
6. What are some of the important learnings for this group,



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other than academic, that cannot be noted in terms of grade accomplishment?

7. What are the disadvantages to the individual when a class of mentally retarded are all given work of the same difficulty?
8. Read pages 208–227 of Pechstein and McGregor's *Psychology of the Junior High School Pupil* listed below. Outline a plan providing for the participation of the mentally retarded in junior high school activities.
9. Make a list of advantages that a school for the adolescents from the mentally retarded group could provide in the way of equipment and curriculum that a special class in an elementary school, with pupils from 9 to 15 years old, could not provide.
10. How closely related to the discussion in the present chapter are the principles outlined in Chapter III? List the principles that are most closely related to the plans suggested in this chapter.

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## *Chapter Seven*

### THE SELECTION OF MENTALLY RETARDED PUPILS FOR A SPECIAL PROGRAM

THE recognition, study, and diagnosis of the individual mentally retarded child is an important phase of the program for the education of this group. The selection of children for special treatment should be made on as comprehensive and scientific a basis as possible in order that only those children who need the special type of educational program planned for the mentally retarded group may be included in it. Those who would profit more from some other form of school adjustment should be given the treatment that will be of most value to them. Understanding of the child's general behavior and of the conditions that lie back of his retardation are then significant for the teacher as she tries intelligently to meet his needs.

Selection and diagnosis of children needing special treatment are usually taken care of in city communities by competent specialists<sup>1</sup> who administer tests to retarded pupils, combine and interpret findings from the different fields of study, and make recommendations for an educational program. Certain states having legislation pertaining to the education of this group

<sup>1</sup>The number of adequately trained persons throughout the United States who can administer psychological tests is increasing — namely, certified clinical psychologists and psychological examiners, psychiatrists, and physicians. In many small communities, however, tests are still administered by the special-class teacher or supervisor who has merely studied tests and mastered the technique of administering them but who has not had first-hand training and clinical experience in dealing with many types of atypical children.

furnish a state-wide service for towns and small communities. New York and Massachusetts<sup>1</sup> are two of the states that give outstanding service of this kind. The New York State plan was selected for brief description here because of its general adequacy.

#### METHODS OF CASE STUDY

*The New York plan.* In New York State the local school administrator is advised by the Research Division of the State Education Department to take the following steps in attempting to discover the mentally retarded children under his jurisdiction:<sup>2</sup> First, make an inspection of the age-grade tables for grades 1 to 5 and record the names of any pupils who are two years or more over age. Second, secure teachers' recommendations concerning the suitability for special class of children in their grades — this to be done independent of the over-age survey. Third, check the names on either list against academic and health records and social history to ascertain any obvious causes of retardation. Scores on group intelligence tests should also be consulted. If they are not already available, it is advisable to administer a group intelligence test. Fourth, after removing from the list any whose retardation is obviously due to causes other than mental, a psychological study should be made of each individual child by a qualified psychologist. Such an examination

<sup>1</sup> See *Regulations for Determining the Number of Children Three Years Retarded in Mental Development* (Department of Mental Diseases and Department of Education, Commonwealth of Massachusetts; 1931). Massachusetts maintains fifteen traveling school clinics and fifty-two outpatient clinics for mental and nervous diseases to which retarded children may be referred.

<sup>2</sup> See *Organization of Special Classes for Subnormal Children*, Bulletin No. 986, pages 5 and 6 (University of the State of New York, Albany; 1933).

will include an individual intelligence test, performance tests, and achievement tests.<sup>1</sup>

Where no certified person<sup>2</sup> is available in the local system, the school administrator may make arrangements to have the children examined through the Educational Research Division of the State Department of Education or the State Department of Mental Hygiene, which conducts clinics throughout the state at various times. Such a plan of case study is feasible for all communities in the state.

*Description of forms commonly used.* Data for the study of individuals being considered for special educational treatment are usually assembled in four forms: the school history record; the home, family, and personal history record; the physical record; and the psychologist's report.

1. In the school history form the principal and teacher give information which briefly describes the child for whom study and recommendation are desired. Social status is indicated by items concerning the neighborhood, nationality, and occupation of the parents, and contacts with social agencies. The degree of retardation is indicated by items on length of time in school, the amount of retardation, and present estimate

<sup>1</sup> The tests used depend on various factors, including the age and the ability of the child. A revision of the Binet test — the Stanford is the most widely used — determines the mental level. Performance tests to supplement the Binet include some of the following: Porteus Maze Series, Healy Form Boards A and B, Healy Picture Completion Nos. 1 and 2, Cornell-Coxe Performance Ability Scale, Arthur Performance Scale, MacQuarrie Test for Mechanical Ability. Some of the commonly used achievement tests are the Gray Oral Reading Test, Haggerty Reading Tests, Thorndike-McCall Reading Scale, Ayres Spelling Scale, and New Stanford Achievement Test. Diagnostic tests may also be used, depending on the specific situation.

<sup>2</sup> New York State since 1919 under the Mental Deficiency Law has granted the title of Registered Psychologist. The State Department of Education since July 1931, under requirements set up by the Educational Research Division, has granted certification for school psychologists.

of educational ability. Social traits, including attitudes and the record of attendance, are described to indicate the social adjustment of the child in his school environment. Statements from the health report indicate physical condition.

2. The home, family, and personal history record gives information about the family and personal history. Facts and impressions for this record are secured through the school nurse, visiting teacher, or social agency. Kind of heredity, type of family, opportunity or lack of opportunity in the environment, the child's ability to make early adjustments in life (such as walking and talking), and the conditions (illnesses or accidents) which may have been factors in retardation are indicated.

3. The physical record gives a complete picture of the child's physical condition. A history of previous diseases often explains the present physical condition and defects. The physical examination should be thorough enough to determine the motor, sensory, and organic functionings of the individual so that defects may be remedied where possible and so that helpful adjustments may be encouraged in the case of non-remediable defects.

4. In his report the psychologist presents a summary of all the findings of the study and on the basis of these makes recommendations for an educational program for the child. On these the teacher and others concerned with the problem will proceed. The child's capacity to learn is gauged by his performance on the Stanford-Binet Scale and performance tests, with any significant failures and successes noted. The degree of educational achievement on standardized tests shows how well the child's accomplishments measure up to his mental capacity. The social and personality traits

of the child indicate the kind of adjustment he is making socially. History of school attendance, failures, and repetitions in grades indicates the odds the child has worked under. The present physical status is summed up. Significant findings from the child's developmental history, family history, and study of the home environment are noted. Finally the psychologist's summary and recommendations suggest the child's potentialities and outline plans for a school program, physical care, follow-up in the home, and reference to social agencies, if necessary.

Forms used by the New York State Department and the Department of Child Study and Special Education of the Rochester Public Schools in making such individual case studies are presented on pages 110 to 120.

The plan of study just described indicates the need for making diagnosis and selection dependent on a study of all factors affecting a child's retardation. Frequently the child who is failing in his school work is considered in need of special-class placement by principal and teachers, but a detailed study of his case reveals dull-normal or average intelligence with one or more factors, such as behavior, adverse home conditions, a special reading or number disability, or a sensory defect, as the cause of the difficulty. The best treatment for this child may be carried out by a plan other than special-class placement. On the other hand certain conditions, such as an unsatisfactory home situation, a physical disability or emotional instability, together with borderline intelligence, may indicate that the special class will offer the best means of adjustment for a particular child. The case studies reported on pages 120 to 128 illustrate these facts.

**THE UNIVERSITY OF THE STATE OF NEW YORK**  
**THE STATE EDUCATION DEPARTMENT**  
**EDUCATIONAL MEASUREMENTS BUREAU**

**SCHOOL AND PERSONAL HISTORY BLANK**

Name ..... Date .....

Place ..... School ..... Grade .....

Address ..... Sex ..... Color ..... Age .....

Birthplace . . . . . Date of birth .... .. Parent's name .....

---

Age at entering ..... k'd'g'n. .... Grades repeated .....  
1st gr. ....

Is he doing satisfactory work in present grade? ..... Communities in which child has attended  
school .....

Prolonged absences? (Causes and age at time of) . . . . .  
.....

Daily attendance regular or irregular ..... If irregular, cause .....  
.....

**School work** [Place check on part of line where you estimate child's position]

<i>Industry</i>	Marked persistence	Ordinary effort	Extreme laziness
<i>Attention</i>	Excellent concentration when studying	Ordinary concentration	Extreme inability to put attention on task
<i>Interest</i>	Marked indifference to work	Ordinary degree of interest in study. Needs stimulation	Absorbed and genuine interest in work
<i>Memory</i>	Excellent memory	Average ability to retain lesson	Marked inability to remember facts apparently learned
<i>Comprehension</i>	Complete inability to comprehend work of the difficulty of his grade	Slow to grasp but understands with effort	Follows explanation with ordinary ease
			Marked ability to anticipate explanation, to grasp work of greater difficulty

Mention any special aptitudes or disabilities or subjects or activities in which child shows particular interest or lack of interest .....

<i>Previous Intelligence Tests</i>				<i>Educational Tests</i>		
NAME OF TEST	DATE	M A	I Q	NAME OF TEST	DATE	EDUCATIONAL AGE OR GRADE STANDING
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....



## Reverse of School and Personal History Blank

**Date of last physical examination** ..... **Defects found** .....

.....

### **Personality** [*Underline the words that describe the child*]

Overquiet, quiet, talkative, active, overactive, restless, energetic, leader, ringleader.

Impulsive, nervous, excitable, easily discouraged, hot-tempered, irritable, "goes to pieces easily."

Cheerful, depressed, changeable, stolid.

Easily led, suggestible, shy, timid, unambitious, lacking self-confidence, self-conscious.

Selfish, conceited, self-centered, overconfident, unable to conform to group.

Distant, seclusive, oversensitive, suspicious, unsociable, evasive.

Social, friendly, responsive, popular, adaptable, quarrelsome, unfriendly.

**Conduct.** Describe instances of abnormal conduct shown by child such as lying, stealing, bullying, truancy, outbursts of temper, abnormal sex tendencies, abnormal fear, antisocial activities. What problem does child present?

**Personal history** [*If further information about family or child's development can be given, attach extra sheet*]

Birthplace of father ..... of mother .....  
 Occupation of father ..... of mother .....  
 If parents are dead, with whom is child living? .....  
 Language spoken at home ..... Do parents read and write English? .....  
 Do they read and write native language? ..... General repute of family as to economic  
 and moral status .....  
 Peculiarities in environment or family conditions which may be detrimental to child .....  
 .....  
 .....  
 Names and ages of all brothers and sisters, and school grades of those in school .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 [Signed] ..... History obtained from .....  
 ..... *Position*

# Form I (for School History Record) BOARD OF EDUCATION

Rochester, New York

## DEPARTMENT OF CHILD STUDY AND SPECIAL EDUCATION

Blank Requesting Examination. Preliminary Data to be given by Principal and Teacher.

Name.....	.....	Date .....	.....	School No.....
Address .....	.....	Date of birth .....	.....	Age .....
Grade now attending .....	.....	Date certified by .....	.....	Sex .....
Grade work able to do .....	.....	Age on entering Kdg .....	.....	1st gr .....
Attendance, reg or irreg .....	.....	No. of terms in each grade (indicating slow-moving groups) .....	.....	.....
Causes of irreg attendance .....	.....	1B .....	2B.....	2A .....
Previously enrolled in what schools .....	.....	3A.....	4B.....	4A .....
Foreign born .....	No years in America .....	6B.....	6A .....	7B .....
Name of father .....	.....	Do parents speak English? .....	.....	.....
Name of mother .....	.....	Nationality .....	Occupation .....	.....
REASON FOR REQUESTING THIS EXAMINATION .....				
.....				
.....				
Significant personal or family situation, disease or defect .....				
.....				
.....				
Has child been in court? .....				
.....				
Physical defects reported on medical card. Date .....				
.....				
Teacher's observation of health .....				
.....				
Underscore the words that best describe the child.				
Active, Passive;—Happy, Unhappy;—Industrious, Indolent;—Self-confident, Self-distrustful;—Sensitive, Not Sensitive;—Timid, Bold;—				
Impulsive, Inhibited;—Enthusiastic, Indifferent;—Accurate, Inaccurate;—Kind, Cruel;—Mature, Immature;—Creative, Destructive;—Stable,				
Excitable;—Truthful, Deceitful;—Agreeable, Quarrelsome;—Dependable, Unreliable;—Cheerful, Moody;—Selfish, Unselfish;—Tractable,				
Mischievous;—or .....				

# PEDAGOGICAL ACHIEVEMENT

DIRECTIONS.—If pupil can do work equal to 6A in reading, 4B in arithmetic, etc., place an X under reading directly opposite 6A; under arithmetic directly opposite 4B; etc. Connect the X's with straight lines

Rate social traits—V. P. very poor, P. poor; G. good or average, V. G. very good; S. superior

GRADE	ARITH.	LANG.	READ.	SPELL.	GEOG.	HIST.	PEN-MAN-SHIP	HAND WORK	PHYS TRAIN	SOCIAL TRAITS
8 <sup>A</sup> <sub>B</sub>										Self-Control
7 <sup>A</sup> <sub>B</sub>										Application
6 <sup>A</sup> <sub>B</sub>										Co-operation
5 <sup>A</sup> <sub>B</sub>										Leadership
4 <sup>A</sup> <sub>B</sub>										Sociability
3 <sup>A</sup> <sub>B</sub>										Adaptability
2 <sup>A</sup> <sub>B</sub>										Obedience
1 <sup>A</sup> <sub>B</sub>										Practical Judgment
Kindergarten Instructions										Trustworthiness

Remarks by Principal: Signed ..... Teacher

Known to visiting teacher..... School nurse ..... Signed ..... Principal

**COPY OF PERMANENT RECORD CARD**

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# STANDARDIZED EDUCATIONAL TESTS

DATES GIVEN	NAME OF TESTS	RESULTS
<p>...</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	<p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p> <p>.</p>	<p>.</p> <p>....</p> <p>.</p> <p>....</p> <p>....</p> <p>....</p> <p>....</p> <p>.</p> <p>....</p> <p>....</p>

## SUPPLEMENTARY INFORMATION

# Form II (for Home, Family, and Personal History Record)<sup>1</sup>

File No.....

## BOARD OF EDUCATION

Rochester, New York

### DEPARTMENT OF CHILD STUDY AND SPECIAL EDUCATION

Name ..... Address ..... School ..... Date .....  
 Birth date ..... Neighborhood setting .....

#### HOME AND FAMILY BACKGROUND

Hygienic and economic conditions . . . . .  
 Father: Age . . . . . Health . . . . .  
 Mother: Age . . . . . Health . . . . .  
 Father: Education . . . . . Work history . . . . .  
 Mother: Education . . . . . Work history . . . . .  
 Any other elders in home . . . . .  
 Place of child in family group . . . . .

BROTHERS' NAMES	AGE	SCHOOL	GRADE OR OCCUPATION	SISTERS' NAMES	AGE	SCHOOL	GRADE OR OCCUPATION
.. .. .							.. .. .
.. .. .							.. .. .
.. .. .							.. .. .

Is home broken? .....  
 Attitudes and influence of grandparents, parents, siblings, etc .....  
 Methods of discipline . . . . .

If these conditions are found, in what member or members? Describe.

Feeble-mindedness, alcoholism, tuberculosis, convulsions, epilepsy, insanity, migraine, nervousness, or any other hereditary defects or exceptional conditions . . . . .

Any member of family with delinquent or immoral tendencies, or court record? Describe. . . . .

Known to what social agencies? . . . . .

## PERSONAL HISTORY OF CHILD

Unfavorable birth conditions . . . . .

Age of dentition . . . . . Began to walk . . . . . to talk . . . . .

Personality development from infancy on: toys, play, companions, etc. . . . .

*Health:* Any serious accidents, operations, significant diseases or symptoms (date, describe and give after-effects). (Note especially ear infections, eye trouble, high fevers, convulsions, fainting, rickets or malnutrition in infancy, chorea, paralysis, meningitis) . . . . .

Limited by any permanent physical weakness or handicaps as: Serious eye defect . . . . . deafness . . . . .

epilepsy . . . . . paralysis . . . . . orthopedic deformity . . . . . cardiac . . . . . or . . . . .

History taken by . . . . . Informants . . . . .

<sup>1</sup> This form is adapted from an earlier form. It suggests salient conditions that are now recorded in the running history record but not on a regular form.



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FORM III (for Health Record). Regular school health form is used.

FORM IV <sup>1</sup> (for Psychologist's Report)

### CHILD STUDY REPORT

- I. Problem
- II. Psychological data
  - (a) Stanford-Binet Scale
  - (b) Performance tests
  - (c) Educational tests
- III. School progress
- IV. Social and personality traits
- V. Physical condition
- VI. Supplementary information
  - (a) Family history
  - (b) Developmental history
  - (c) Home environment
- VII. Summary and recommendations

### ILLUSTRATIVE CASE STUDIES

The following case study, briefly reported, describes the type of child often proposed for the special class but found by a detailed study to need a different kind of educational program.

#### CASE A

Tom, aged 10 years, attending the 3B grade.

*Problem.* Tom was referred for study because of his age and the inferior quality of his work, particularly in reading.

<sup>1</sup> Form IV is not a fixed form. There is suggested here only an outline that is varied with the type of case to be reported.

*School progress.* He had attended the same school regularly from first-grade entrance at six years, had spent two years in the first grade, one and one-half years in the second grade, and was a trial promotion to the 3B grade.

*Social and personality traits.* The teacher described Tom as obedient, trustworthy, and co-operative, but passive, timid, inhibited, and lacking in leadership; able to do only beginning reading, and below average in other subjects.

*Psychological data.* Study showed a boy with a Binet mental age of 9 years 6 months, an I.Q. of 96, a number test score at 3B level, a reading rating at 1A level, and spelling still lower. He was at ease and responsive in the test situations until reading was mentioned, when he showed marked sensitiveness and grave concern over the possibility of demotion. He cried, complained of nausea, and asked to go to the nurse.

*Summary and recommendations.* Tom was evidently not a candidate for special class. A study of the reading difficulty and of the home situation was made. Specific remedial work in reading was recommended and a plan was suggested to the mother and the teacher for the development of attitudes of self-confidence and success in the child.

The following case indicates the type of child where study discloses borderline intelligence and accompanying factors that make special-class placement advisable.

#### CASE B

John, aged 7 years 4 months, attending first grade.

*Problem.* John was referred for study because his age, inferior work, and behavior suggested the possible need for special-class placement.

*Psychological data.* At 7 years 4 months John had a mental age of 5 years 8 months and an intelligence quotient of 77, as determined by performance on the Stanford-Binet Scale. A specific handicap in immediate memory was apparent, as he failed a memory test at the three-year level. His greatest success was along lines of language ability. His

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response in the descriptions of pictures came up to expectations for the seven-year level. One outstanding feature of the examination was the unevenness of ability it indicated — failure in a test at three years, a success at seven years, and an accompanying inability to attend to any one thing for more than a few moments at a time.

On the Gray Reading Scale he did not recognize any of the words. He was unable to write his name.

*School progress.* John had attended kindergarten one term and first grade three terms. The teacher reported him as able to do only kindergarten work.

*Social and personality traits.* During the examination he was very friendly; he wanted to play with the materials and was in a very talkative mood. He gave the impression of being likable and suggestible. The teacher described him as “sullen, bold, cruel, destructive, mischievous, excitable, deceitful, quarrelsome, moody.” He was reported by the teacher as developing habits of smoking, masturbation, and truancy. The mother reported that he frequented the streets with many older boys who had taught him to play craps, and also that he had stolen in the home.

*Physical condition.* He was small for his age, his height being only forty-two inches — the average for a five-year-old boy. His health history showed mumps and measles at the respective ages of three and four with no recorded after-effects. The school nurse reported that tonsils and adenoids had been removed two weeks previously and that the boy had been circumcised. He had a slight lisp which was, no doubt, caused by the poor condition of his teeth.

*Supplementary information.* The family lived in a clean, comfortably furnished home over a store, in a city block in a neighborhood that was rated below average. The stepfather did piecework in a piano factory and the mother kept house. The mother was not willing to talk about John's early history or about his father. The boy was an illegitimate child born when the mother was fifteen years old. The mother had a three-year-old girl and a two-year-old boy by her husband. The boy was shabbily and carelessly dressed

in contrast to the other children. The mother was young, vacillating, nervous, and became easily upset. She was exceedingly fussy about the house at the expense of her own strength and the children's freedom. She was anxious to have the child behave, but admitted that she had no control over him. She made a great deal of his bad habits. The mother said that the stepfather thought John was a bad boy, but was not very severe with him. The mother was willing to co-operate with the school.

*Summary and recommendations.* The study suggests a slow child whose difficulties may be partly due to retarded physical development, unwholesome environment, and to undesirable habits that he is developing. An examination at the neurological clinic at the H. Hospital has been arranged in order to determine a possible physical basis for his difficulties. Although the boy is young and has an I.Q. of 77, which is above the limit of 75 usually accepted for special class, a period of observation and trial in a special class is recommended to determine how serious the situation is from the standpoint of both retardation and behavior. Further study of the parents' attitude toward the boy is advised, since one of the major sources of the difficulty may lie in the child's feeling of insecurity in the home.

The boy's interests and energies should be directed into wholesome channels in both out-of-school and in-school time. On the basis of his performance on the Stanford-Binet Test, John is not yet ready for reading. Excursions, stories, dramatic play, rhythm, games, drawing, and construction should be given to develop experiences for a reading background.

The two following cases indicate the type of child where study discloses an I.Q. below 75 and need for special-class placement.

#### CASE C

Harry, aged 9 years 6 months, attending the 2A grade.

*Problem.* Harry was referred for study because age and

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inferior work suggested the possible need of special-class placement.

*Psychological data.* Harry at 9 years 6 months had a mental age of 6 years 8 months, with an intelligence quotient of 70, as determined by performance on the Stanford-Binet Scale. He had difficulty in tests of immediate memory at the six- and seven-year level. He was unable to count backward from 20 to 1, an eight-year test. His best and only successes at that level were in a test of comprehension, and in writing "See the little dog" from dictation.

On the Gray Oral Reading Test he could not read better than a 1A pupil.

He could count and read numbers to 50 and recognized the simple number combinations to 18 but became confused with those more difficult.

*School progress.* He entered the kindergarten at 5 years of age, the first grade at 6 years, and spent four terms in completing it. He entered the 2B grade at 8 years, attended it one term, and had been in his present grade, 2A, for one term. The teacher reported him as very slow in his progress, fluctuating in his work, and after an illness of grippe seeming to lose all he had learned and not regaining it.

*Social and personality traits.* Harry was dull and unresponsive. The teacher described him as passive, obedient, reticent, sensitive, and nervous. The mother stated that he was inclined to be inactive, that he played rarely with other children in the neighborhood, and that he often played alone because of the different interests of his brother and sister. (See the report on his home and family.)

*Physical condition.* Harry was well developed for his age, tall and heavy. He had had a series of colds during the past winter. A physical examination showed need for throat, nose, and dental care. The family were willing to co-operate and followed out the school's recommendations at once.

*Home and family.* The home was in a good neighborhood. It was well furnished, neat, and sanitary. The economic status and influence were good. The grandmother was

living in the home. The parents were very intelligent German Jews. The father was a tailor. Two brothers and a sister were doing above-average work in school — one brother at 13 years of age was in the first year of high school, the sister at 8 years of age was ready for the fourth grade.

The grandmother and mother were very much worried about Harry. The mother said she realized that he was backward, that he did not care for books and did not understand things as did her other children, that she knew he never would succeed as his brothers and sister had, but she wanted him to go through the eight grades. She hoped that he would develop other interests. She observed that he was fond of autos and machinery. She wanted to have the boy tutored to see if that would help him. His more capable brothers and sister tended to make fun of Harry's slowness.

*Developmental history.* Harry's birth was normal, and as a baby he was bright and active like the other children in the family. He had walked and talked at an early age. His teeth came late, were very hard in coming, and two or three had to be lanced several times. At about two and one-half years of age, when he was having difficulty with teething, a sudden change came over him. He became quiet and stolid, lost his speech, lost all understanding, and had to be fed and taken care of like a baby. At times he became violent and bit and tore everything within reach. The grandmother said she attributed it to the hard time that he had when teething. For two and a half years he remained in this state. Gradually he began to improve. The family doctor, who had since died, told them that Harry would be from two and a half to three years backward when he grew older. The family reported that other doctors had examined the boy and said that there was nothing physically wrong and that he might outgrow his peculiarities. He had been examined for deafness, but no defect was found.

*Summary and recommendations.* The study suggests a slow child, physically well developed although inactive, who

needs individual study and help in a special class. The results of the examination indicate that the boy is accomplishing in reading and number what might be expected for his mental age. A careful study of his progress in academic work in the special class is recommended, and the results should be reported regularly to his parents in order to help them better understand his limitations. There is need for finding interests along constructive and play lines that will give the boy opportunity to express himself with success that the family can recognize. Close co-operation with the home toward a better understanding of Harry is advised.

## CASE D

Sarah, aged 13 years 2 months, attending the 4B grade.

*Problem.* Sarah was recommended for study because she proved incapable in a 4B grade, having entered the city system from a small-town school.

*Psychological data.* At 13 years 2 months of age she had a mental age of 9 years, with an I.Q. of 68, as determined by performance on the Stanford-Binet Scale. She failed tests in rote memory and comprehension. She was unable to make simple change. Her best successes were in tests involving language at the ten-year level.

On the Gray Oral Reading Test she read as well as the beginning 4B pupil.

On a local arithmetic test she reached the median for the 3A grade. She was weak in multiplication, division, and problems.

On local spelling tests she succeeded at the 3A level.

*School progress.* Sarah did not enter school until she was eight, because of broken home conditions. She spent one year in the first grade, one year in the second, repeated the third, and had had one year in the fourth grade. Since the third grade her work had not been satisfactory. She had been in the 4B grade in the city system two weeks and the teacher said she was able to do only second- or third-grade work.

*Social and personality traits.* The teacher described her as "active, happy, sensitive, inaccurate, excitable, and poor in application, adaptability, and practical judgment."

During the examination she was cheerful and at ease. She talked freely and had no comprehension of her limitations. She seemed socially immature. The mother spoke of her as sometimes appearing like a seven- or eight-year-old child. She stated that she played happily with younger children, but liked girls of her own age. She stated also that she showed a good disposition in the home and was willing to help.

*Physical condition.* The child looks physically immature, but otherwise appears healthy. There are no physical defects noted on the medical card. The mother thinks of her as being well and healthy. She reports the habit of enuresis in the child, but is not concerned about it as she says that she had the same trouble until she was fourteen years of age.

*Home and family.* The family were living in a single house in a fairly good neighborhood. The house was not yet fully settled, as the family had just moved to town. There were, however, evidences of poor housekeeping although the furniture and the equipment seemed adequate. The mother, a woman of about average intelligence, kept house and was in her eighth month of pregnancy. The stepfather had had a steady job for twelve years on piecework at the Kodak factory. Six months before this investigation he had been laid off and had had no steady work since. The family were worried over their economic condition. Sarah's own father had died when the child was about six years old and the home had been broken up for a time. There was one baby, ten months old, in the second family.

*Developmental history.* The mother stated that Sarah's birth and early development had been normal. At one and a half years of age the child had had serious intestinal trouble for about four months. At no time had she had any convulsions or fainting spells. She had from the beginning been an enuresis problem.



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*Summary and recommendations.* The study suggests a slow learner with a late school start who is not living up to her mental ability after five years of school experience. As she needs special-class help in making the most of her language abilities and in improving her arithmetic, a transfer to a girls' class is recommended. Specific help should be given along homemaking lines that Sarah can carry over into the home. She should be referred to a clinic for study and treatment for enuresis. After the family has had time to settle, further investigation may be needed in the home to determine the standards and to discover whether or not the family should be given help in their present emergency.

Such complete studies of health, mental ability, achievement, environment, and personality as these just reported are needed in selecting individuals for placement in special classes. These reports may also serve to suggest the individual nature of the problems that the teacher will meet in a special-class group. They call striking attention to the fact that each child is an individual whose personality is the result of all of heredity and environment that have gone into his making, and whose education must be an individual thing based on the significant findings in his particular case.

### OUTLINE FOR TEACHER'S ANALYSIS AND PLAN

The following question outline suggests a method of analysis of the data revealed by individual case study. The answers recorded suggest how these findings may be made to serve the teacher in any attempt to understand and plan for the needs of the individual child. The case reported is that of Harry, already reported on pages 123 to 126 as Case C.

ANALYSIS OF SOCIAL AND EMOTIONAL FACTORS

Are there any social, hygienic, or economic conditions in the home or neighborhood that are affecting the child's behavior?

*None are noted.*

What are the religious affiliations? moral influences?

*Family are of unorthodox Jewish faith with high moral standards.*

Who are the members of the family group? What is the condition of their health? their intellectual and economic level?

*Grandmother and parents intelligent; a brother and sister above average intellectually. Economic status good; health excellent.*

Are there adverse or critical attitudes toward the child on the part of the family?

*Over-concern on grandparents' and parents' part, and teasing by brighter siblings, causing undoubtedly some of child's passiveness and sensitiveness.*

Are there any problems presented in play associates and interests?

*The mother notes inactivity, a tendency to avoid play with neighborhood children, and no interests in common with brighter brother and sister.*

Has he an antagonistic, indifferent, or co-operative attitude toward school?

*Indifferent, but obedient and co-operative.*

Are there any delinquent tendencies present?

*None are evident.*

What favorable conditions can be utilized?

*Social and moral influence in the home; intelligent, interested parents who realize that conditions exist that need attention. Their ready response to advice concerning the boy's physical condition indicates a willingness to co-operate.*

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### THE RESULTING PLAN

*Helping the family to develop a wholesome attitude toward the child. Specific suggestions for improving physical and learning conditions will suggest means of encouraging social and emotional development.*

### ANALYSIS OF PHYSICAL FACTORS

What is the health status of the child? Is he free to learn or are there any health conditions which hinder?

*Well developed physically for his age. Removal of adenoids and tonsils and dental care should aid in checking susceptibility to colds.*

If there is present an irremediable condition how can its influence be minimized? What is the child's attitude toward any such irremediable condition?

*No irremediable condition is evident.*

If conditions are remediable, can parents' and child's co-operation be secured in correcting them? Are they of such a nature that they require medical or surgical care? Or do they require rebuilding of habits?

*Parents' immediate attention to recommendations of physical examiner indicates that co-operation in maintaining health may be looked for.*

If the child is physically in good condition, what plan may be followed to maintain satisfactory physical condition and growth?

### THE RESULTING PLAN

*Watching for improvement in regard to susceptibility to colds and for more effort and responsiveness on the boy's part as a result of this improved health condition.*

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*Securing the home's co-operation regarding food, rest, and exercise.*

*Arranging for child's participation in stunts, games, and rhythm to induce sociability and activity.*

*Suggesting stunts and games that can be tried with neighborhood playmates.*

### ANALYSIS OF MENTAL AND EDUCATIONAL FACTORS

What are the child's learning potentialities as indicated by tests?

*At 9 years 6 months the child has a mental age of 6 years 8 months and an I.Q. of 70. He should make steady but slow progress in the practical application of tool subjects and will succeed in hand and shop training.*

Has he made expected progress for his learning ability in the subjects he has already attempted?

*Yes, at 6 years 8 months of mental age he is succeeding in 1A reading and writing and has a beginning foundation of number concepts.*

Are there any subjects in which the child has conspicuously fallen below the level of his mental ability — i.e., is he lacking a reading vocabulary when he is 6 years 8 months mentally? is he unable to write? is his number sense undeveloped?

*No, he is achieving up to the level of his mental ability.*

Has he any special aptitudes or interests, such as drawing or mechanical ability?

*Family observes an interest in autos and machinery. Test report does not mention any special ability.*

How much longer will the school have to guide his development?

*Six and one-half years if the boy stays in school until he is sixteen. The family will likely want him to stay on longer.*

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### THE RESULTING PLAN

*Planning for review of simple first-grade material to give success and confidence. Testing vocabulary and comprehension with a basal reader new to him.*

*Later on suggesting to the family books suitable for a home library, subscribing to Weekly Reader, etc.*

*Directing attention to practical situations where number is used, developing familiarity with numbers.*

*Utilizing stories, announcements, etc., to give practice in writing.*

*Keeping the family informed of the child's successes.*

*Providing media for handwork, finding interests and abilities along constructive lines which will give success and enable the family to recognize any ability he may have in this respect.*

*Advising the family to work out a science interest like an aquarium, gardening, or raising guinea pigs, in which the three children may have a common interest.*

### THE CHILD IN RELATION TO THE REST OF THE SPECIAL CLASS

What is the chronological-age range of the group? the range in learning and educational accomplishment? the range in physical maturity?

Will the child find pupils of his own sex, age, nationality, and race?

*The special class is of the primary-intermediate level with ten boys and eight girls, of American, Italian, and German nationality whose ages range from 7-6 to 12-6. They are carrying on activities of from pre-primer through third-grade difficulty.*

*There are boys in the class of approximately his age and older. Although he is the only Jewish boy in the class, there are many Jewish pupils in the school and they are readily accepted by the entire group.*

In what activities can the child best participate? If very much older or younger than the rest of the group, what extra activities and interests must be provided?

*He may be expected to find suitable interests and activities in the group such as those suggested in the section just above.*

Such a summary analysis of the other case studies reported would tend to focus attention on the individual nature of each problem and suggest the treatment needed. There is the common element of retardation in all the instances reported, but other elements differ. To accept the three pupils assigned to special classes merely as retardation problems without a knowledge of other conditions would not adequately meet the situation for any one of them.

Home conditions vary for each of Cases B, C, and D — the three accepted as special-class problems. Harry, Case C, lives under favorable home and neighborhood conditions. There are no delinquent tendencies evident on his part. The parents are intelligent, interested, willing to co-operate; the siblings are intelligent; and the home can be expected, with the guidance of the school, to supplement and reinforce desirable habits, skills, and attitudes. With Case B, John, the home and neighborhood conditions are socially and morally unfavorable. Serious delinquent tendencies are evident in the child's conduct. The parents in this case will not be able to co-operate very intelligently with the school or social agencies in establishing the right attitudes toward John's behavior and in changing his delinquent habits. The understanding teacher will realize that in this case her home contacts must be frequent to help the parents give the boy a feeling of security and to develop wholesome interests as a sub-

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stitute for illegitimate ones. More information is needed in regard to the home standards and economic conditions of Case D, Sarah, to determine what help, if any, the family needs. The teacher will have to work with the home for a time before she knows what co-operation to expect.

The physical conditions of the three children also differ. Case C, Harry, is physically in good condition, with the family ready to take the initiative in whatever is for the child's good. Case B, John, is physically immature. Further study of his physical condition, is recommended to determine a possible physical basis for his condition. The total picture of Case D, Sarah, suggests physical and social immaturity with evident unconcern on the parents' part. There is need for study and treatment of a condition of enuresis.

Mental and educational factors are different in the three cases. Case C, Harry, is living up to his mental level of 6 years 8 months and his I.Q. of 70. He may be expected to make slow and steady educational progress in the six or more years of school life before him. As further study indicates Harry's possibilities along mechanical and academic lines, the teacher may help the family to know what to expect of the boy and how to adjust their demands to his capacities. The school has a longer period in which to guide the development of John, Case B. With an intelligence quotient of 77 his progress will undoubtedly be slow, but any estimate of progress must be reserved until medical and teacher observation and experimental treatment aid in further diagnosis. Case D, Sarah, is that of a thirteen-year-old girl with only three years more of school life before her, who has spent most of her school days in a school environment in no way adjusted to her needs. She succeeds in reading better

than in any other subject; she is not living up to expectation in her other work. The teacher, in this instance, will have to help the child to achieve the best she is mentally capable of and try to give her a background of practical experience for homemaking and holding a routine job.

Such case studies as these reported are not intended merely as descriptive statements. They are included here to indicate the type of detailed study that is necessary in identifying pupils in need of a special program.

The decision to place a child in a special class should in every case be reached on the basis of all pertinent factors discoverable, including the fitness of the class to serve his particular needs. Studies made in selecting pupils for special classes will be readily seen to have value also as a basis for the teacher's analysis of the individual child's problems and for her plan of treatment.

The questions outlined for the analysis of a case are not at all exhaustive; they are only meant to suggest conditions that the teacher will want to study as she works with the child in his school, home, and community life. If the teacher has access to less complete reports than those outlined in this chapter, the questions suggested in the summary outline may serve to direct her thinking to the need for further investigation of outstanding conditions that may affect the child's development. She should learn to search records and sources to discover pertinent information, and to supplement these whenever it seems important.

The kind of case study outlined in this chapter is of course desirable for every child, whether normal or deviate. As schools generally come to conceive their



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task to include that of personality adjustments, such case studies will be made for an increasing number of children.

### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Discuss at least two other reasons than those mentioned for making as thorough and as objective a study as possible of pupils placed in special classes.
2. Describe in detail the school achievement and behavior of three retarded children whom you have had in a regular grade.
3. List all the problems you can think of that arise in the behavior of children in the classroom. How many of them do you think may be the result of misplacement due to retardation? Give an explanation for your answer.
4. Analyze and discuss the type of information that is provided for in the school history forms used by Rochester and the New York State Education Department.
5. Why would it be inadvisable to place Case A, page 120, in a special class?
6. Under what conditions, if any, might the medical examination be omitted at the time of examination to determine special-class placement? the home visit?
7. Make an analysis and plan for Cases B and D, pages 121 and 126, using the outlines suggested in the chapter.
8. Why has the school broadened its functions to include more than instruction in academic learning?
9. Which is preferable, a history record in the form of a continuous series of statements or one taken on a prepared record form? Discuss the advantages of each.
10. Discuss the advantages of such a case study as those described for any school child who presents a problem.
11. What effect are such studies likely to have on the teacher's methods?

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## *Chapter Eight*

### THE SPECIAL CLASS — AN EDUCATIONAL LABORATORY

THE special class, with its comparatively small numbers, striking individual problems, and peculiar challenge to aid the development of each member to his very fullest capacity, provides an educational laboratory for observing, studying, interpreting, and guiding the development, behavior,<sup>1</sup> and physical well-being of children.

Here the teacher may make a careful study of each child in his classroom environment. She will observe carefully his reactions to her, to other children, and to materials and activities as she attempts to find the group of which he can best become an integral part, arranges work that is suited to his ability, provides proper materials for play and for construction, suggests responsibilities that he may assume, and encourages him to make his best efforts in various sorts of activities. She will, of course, find out still more about the child by visiting his home and neighborhood to observe conditions there first-hand and by observing his behavior on the street and on the playground. The "why" of favorable and unfavorable reactions in many instances is explained by the psychologist's and health service reports; these the teacher will also study thoughtfully. For only as she comes to understand the causes of the child's behavior is she able to remove elements that interfere with his development and to create situations that will encourage sound health and wholesome habits and attitudes in general.

<sup>1</sup> "Behavior" here refers to all the child's feeling, overt acting, and thinking.

As was suggested in the preceding chapter, certain physical conditions may need medical attention or corrective training, conditions and attitudes in the home may need changing, and outside companionship and the use of free time may require redirection. Any such needed changes in the child's health and out-of-school environment are as essential to his proper development as are the methods and environment of the schoolroom.

By recording from day to day and from year to year her observations, her treatment, and the outcome of her efforts with various individuals, the teacher may build up a record from thoughtful analysis of which she may acquire a valuable background of child understanding. From this she may learn to recognize causes and to treat with ever increasing success specific kinds of conduct. From this reliable background of understanding based on thoughtful analysis of actual experience, she may learn to provide effective help at all levels of social development and of learning ability.

#### THE PHYSICAL WELL-BEING OF THE CHILD

Among the first considerations for every child is health. If the child is not in good physical condition and conditions in the classroom are not healthful, the teacher can hope to effect little real improvement in his attitude or accomplishment.<sup>1</sup> For both these sets of conditions the teacher has a definite responsibility.

*Classroom conditions.* It is important for every teacher to understand the essentials of a healthful classroom if she is to make her fullest contribution to the encouragement of health in her pupils. Certain

<sup>1</sup> J. E. W. Wallin, *Clinical and Abnormal Psychology*, pages 81-83 (Houghton Mifflin Company, Boston; 1927).

of these essential elements are provided for in the following suggestions to teachers of responsibilities they should assume and of ways of meeting them.

1. Air movement, temperature, and humidity have a marked effect on comfort and on physical and mental energy. Be sure to see insofar as is within your control that the ventilating system is supplying clean air without drafts and in adequate quantity to eliminate odors.<sup>1</sup> Notify the proper responsible person when it does not. The ordinary thermometer alone does not indicate whether the atmospheric condition in a room is within the comfort zone.<sup>2</sup> Attention should be paid to the simultaneous control of temperature and humidity. For winter conditions a temperature of 68 degrees Fahrenheit and 60 per cent relative humidity is ideal. When a lower humidity is maintained, a higher temperature is required for equal comfort. Temperatures between 72 and 68 degrees with relative humidities between 40 and 60 per cent respectively are recommended for classrooms.

2. Adequate lighting<sup>3</sup> means eye protection and assures increased ease in all school work that demands use of the eyes. If possible, test with a light meter the amount of light in the classroom on days that differ in natural light intensity and then determine the best

<sup>1</sup> Teachers who have to assume some responsibility for regulating ventilation and temperature are referred to: *Air Conditions and the Comfort of Workers* and *The Custodian and the School Child* (Metropolitan Life Insurance Company, 1 Madison Avenue, New York); and *Schoolroom Ventilation*, reprint of an address by A. C. Willard (American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York).

<sup>2</sup> See Vol. 38 of *Transactions of American Society of Heating and Ventilating Engineers*, "How to Use the Effective Temperature Index and Comfort Charts" (The Society, 51 Madison Avenue, New York).

<sup>3</sup> Adapted from O. G. Henderson and H. G. Rowell, *Good Eyes for Life*, pages 78-81 (D. Appleton-Century Company, Inc., New York; 1933). Further suggestions are given for artificial illumination, decoration, shades, etc.

position for seats, reading tables, workbenches, etc. The minimum intensity for light on desks and blackboards is ten to twenty foot candles.<sup>1</sup> The light should come from above and behind the left shoulder. The seats should be placed at an angle of about thirty degrees with the windows. In no case should the teacher or pupil face the window. Diffusion or scattering of light is taken care of by the use of the window shades and of artificial lighting. The areas of greatest light intensity should not be occupied by cupboards, plants, etc., but should be used by the children for eye work. All blackboard work should be plain and distinct.

3. Desks should be adjusted to the height of the individual pupil so that the sitting posture is healthful and comfortable.<sup>2</sup> Writing and reading positions must not require stooping. If desk tops are not adjustable at different angles, adjustable study stands should be purchased or made as industrial arts projects. Good reading position requires that the material should be at an angle of forty-five to seventy degrees with the back, and at a distance usually from fourteen to eighteen inches from the eyes. Relative position of material and eyes should be adjusted by moving the work, not the eyes.

These three factors in good reading position "must be flexible enough for the pupils to make adjustments for their own particular needs. These will vary according to the intensity of light, the height of the pupil, and the requirements of his eyes. No fixed angle,

<sup>1</sup> The Illuminating Engineering Society (29 West Thirty-Ninth Street, New York) has a code that is changed from time to time as new findings suggest the desirability for new standards. The latest code should be consulted.

<sup>2</sup> See O. G. Henderson and H. G. Rowell, *op. cit.*, pages 81-83, 91-96.

distance, or height could suit every individual any more than one pair of glasses.”<sup>1</sup>

*Individual health problems.* The maintenance and improvement of the child's health with reference to acute or chronic disorders should be the teacher's concern in co-operation with the family and the school health service. The special-class teacher is in a particularly advantageous position to give such assistance because of the relatively small number of children in her class and because of the close contact she has with their homes as a result of the responsibility she assumes for following up her classroom efforts.

There are certain definite habits that the teacher must develop if she is to co-operate effectively in the prevention and correction of physical impairments. A brief summary of these is given here. In considering them, the teacher must keep well in mind that all her health work should be preventive even more than remedial.

1. Familiarize yourself with the child's condition through study of his health record, including the family health history and the current recommendations of the health examiner.

2. Learn to observe and to interpret signs of sickness in the child's appearance or conduct. Watch for signs of acute trouble that require immediate attention. At each morning health inspection be alert to detect any of the following signs of acute health impairments which should be referred immediately to the school health service:

Unusual color — pallor or flush. Unusual warmth of skin, suggesting fever.

Eruption, rash, or sores of any kind on face, neck, chest, or arms.

<sup>1</sup> Quoted from O. G. Henderson and H. G. Rowell, *op. cit.*, page 84.

Running nose — watery discharge, dangerous type;  
thick nasal discharge, less important.

Red or running eye, sties.

Ear discharge or earache.

Swollen glands of neck — larger than ordinary peas.

Sneezing or coughing.

Sore or inflamed throat, unusual redness near tonsils  
and uvula, tonsils large or red, or sometimes  
covered with gray or white membrane.

Marked circles under eyes and other signs of fatigue.

Any other distinct change from usual appearance  
and behavior of the child.

3. Be always on the alert for evidence of impairments that may be chronic. These should be given the earliest possible attention. Throughout your daily contacts with the children, be always sensitive to symptoms of any of the following conditions. It is advisable once a week at morning inspection to review these symptoms in relation to each child.

Sensory handicaps. Visual handicaps are likely to be suggested by a forward bend, tilt, or twist of the head, by poor posture in reading, refusal to work, failure to concentrate on work, reading difficulty, eye strain, irritability, headaches. Some of the defects lying behind these symptoms are strabismus (cross eye), myopia (near-sightedness), hyperopia (far-sightedness), astigmatism (imperfection in shape of eye), aniseikonia (unequal images). Auditory defects are usually suggested by a dull, unresponsive attitude, day-dreaming, turning head to hear, discharge from ear, or pain in the ear.

Malnutrition is commonly suggested by listlessness, fatigue, poor posture, lack of vitality, failure to gain steadily in height and weight.



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**Tuberculosis.** No obvious beginning signs of tuberculosis are commonly manifested in young children, but deviations from ordinary growth in size or signs of undue lassitude should cause suspicion and suggest a tuberculin test. If a child shows any such tendencies, signs of obvious tuberculosis in other members of the family should be looked for to determine if he is or has been in contact with one who is actively tubercular.

**Obstructed breathing.** Open mouth, listlessness, indistinct speech, usually indicate an obstruction at any point from the tip of the nose back, such as polyps, enlarged tonsils and adenoids, and deviated septum.

**Faulty body mechanics** may be revealed in various abnormal positions of the head, shoulder, spine, abdomen, knees, and feet. Faulty co-ordination may be revealed by hands that are clumsy, fumbling, awkward, limited in range; or by incorrect walking position, by feet that are flat, pronated, or have fallen arches.

**Cardiac impairments** show themselves in an excessive tendency to fatigue, in breathlessness, especially on exertion or climbing stairs, and sometimes in bluish color of the lips and skin.

**Focal infections**, such as diseased tonsils and adenoids, diseased teeth, and other infections, can rarely be recognized by the teacher.

**Abnormal endocrine conditions** are usually revealed by a marked deviation in growth, sluggishness, nervousness, and hand tremors.

**Nervous conditions** may be manifested by symptoms of chorea or epilepsy. Chorea shows itself in involuntary and purposeless twitching of the head, of facial or arm muscles, and in poor co-ordination.

Epilepsy is usually accompanied by marked irritability, stubbornness, slight lapses of consciousness, and in some instances by convulsions preceded or not by aura.

4. Look for aggravating physical causes when the child is responding abnormally — when he shows, for instance, listlessness and indifference, nervousness, flightiness, or irresponsibility, or is making unsatisfactory progress.

5. Where physical impairments have been cared for and observable improvements in general response, behavior, and appearance do not appear, look for other deterring factors that need to be corrected.

6. Wherever there are permanent impairments, like progressive eye trouble, defective hearing, a cardiac or orthopedic condition, medical service should be available. The teacher should secure a physician's advice so that classroom conditions may be arranged and habits established that may prevent further impairment. In case the impairment is irremediable, there is likewise need for securing the physician's advice in arranging classroom conditions and establishing habits that will minimize strain as much as possible.

7. Discuss with the school health service all group and individual health needs of the class. Secure professional advice in health matters and keep all health facts at hand for ready reference.

8. Know the home of each individual child. Know whether the family health service comes through a family physician or through a clinic. It may be necessary to use the latter where there is no family physician.

9. Know the necessary facts concerning the clinical facilities in your community — the basis for securing clinic aid, the fees, appointment hours, and rules of attendance.

DEPARTMENT OF SPECIAL EDUCATION

Rochester, New York

RECORD OF PHYSICAL FOLLOW-UP

(Running Record to Be Kept on Teacher's Desk)

School..... Class.... Term Beginning ..... Ending.....

Teacher .....

No.	NAME	DATE OF EXAMINA- TION	DOCTOR'S RECOMMEN- DATION	DATES OF FOLLOW-UP	CHECK COMPLETE	SERIOUS DEFECTS AND TREATMENT

10. Advise the family, in a personal visit if possible, of your observations and of the recommendations of the school health service. Explain carefully the need. Use judgment in making a plan. Consider the family circumstances, understanding, attitudes, and all possible factors. Sometimes repeated family contacts are necessary before co-operation is obtained. The school health service, if available, will usually help to enlist family co-operation.

11. Follow up conditions such as eye defects, impaired hearing, cardiac weaknesses, etc., at regular intervals and as prescribed by the school health service.

In order to secure results, there must be constant vigilance and effort on the part of the teacher. Each special-class teacher in Rochester fills out the form reproduced on page 146 and keeps it on her desk as a constant reminder of her need to work for physical corrections and for adjustments that may relieve physical strain or remedy unhealthy conditions. She also attends carefully to the daily morning health and cleanliness inspection, involving concern for cleanliness and other matters,<sup>1</sup> as well as any possible detection of the symptoms already listed. The teacher sees to it that rest, nutrition, and exercise are properly provided for in the program of the school day. Maintaining physical fitness becomes an enterprise of chief importance in every classroom.

#### EXAMPLES OF THE HEALTH WORK OF SPECIAL-CLASS TEACHERS

The two following cases indicate the results that may be obtained through the co-operation of the special-class teacher.

<sup>1</sup> See the health attainments outlined on pages 184-186.

The first report is of a case in which considerable time elapsed before remedial treatment was started and treatment was then initiated largely because of the efforts of the special-class teacher. Her attention to such matters as those that have already been outlined here was directly responsible for much of the improvement that came about.

Joe, six years of age, was attending a pre-primary class. He had been in school three terms and was only just beginning to talk. It seemed likely that a mental age of less than five years on the Binet test might be attributed to his general physical condition and an apparent hearing defect. The psychological examiner therefore recommended that he remain in the pre-primary class and that he be given a complete physical examination, including examination of eyes and ears.

Two weeks later a physical examination was made, resulting in the following recommendations: "See eye specialist. Throat care needed. Dental care needed. Better nutrition needed. Test hearing." The mother, who was present at the examination, seemed willing to co-operate. The school nurse was requested to make appointments at various clinics for examinations and to advise the mother about keeping them.

Six months later the child was seen again by the psychological examiner. Nutrition had improved and he appeared to be in better condition physically; but his eyes, ears, and throat were still uncared for. The nurse stated that the mother had not taken Joe to the clinics as she had promised and refused to have his tonsils removed. A bad speech defect was now noticeable, and inattention resulting from loss of hearing was becoming apparent.

Placement in a primary special class was recommended at the end of the term.

Four months later Joe was placed in a primary special class. No further physical corrections had been made. The teacher noted immediately that the child was very pallid and that he twisted his whole body to the right when he was trying to hear. She was aware of the former recommendations that had been made. She consulted the school nurse concerning the problem and concerning the family's attitude. She visited the home immediately, helped the mother to understand the need for care, and in five days Joe was admitted to the out-patient department of one of the local hospitals. Their report was as follows: "Weight normal; posture poor; because of suspicious signs in lungs test for tuberculosis was given but proved negative; hypertrophied tonsils and adenoids removed, satisfactory convalescence. Diagnosis of chronic otitis media, right, with defective hearing. Ear condition to be treated regularly at clinic."

The hearing test at the school showed 35 per cent loss in the right ear and 10 per cent loss in the left ear. Joe was seated to the right of the teacher and lip-reading instruction at school was arranged for.

Two months later Joe's eyes were examined and glasses were fitted. His teeth were taken care of at the dental dispensary.

Four years later the records showed a yearly check on eye, ear, nose, and throat conditions. He had had lip-reading instruction from a special lip-reading teacher. The instruction was being continued by the special-class teacher. His speech had improved so that he could make all sounds without effort, but he was careless about word endings, especially final *s*.

At the age of eleven years he read material of grade 3A difficulty readily; he had spelling ability sufficient for simple letter writing, records, and so forth. He could add, subtract, and multiply, and could apply these skills. He enjoyed constructive work and showed fair skill in it. He was a happy, co-operative member of his school group.

Another report is outlined here to illustrate how one special-class teacher, by giving thoughtful consideration to the child's health condition as a possible factor in his negative behavior, helped in the solution of some of his most serious problems.

James, aged 10 years 1 month, was recommended by the teacher for possible special-class placement because of inability to do grade 1A work. The teacher stated that he was nervous, excitable, had poor memory, poor co-ordination, and slow mental reactions. The home conditions showed a neurotic, unstable mother, with no control over the child, and away from the home all day at work.

The psychological examination showed an I.Q. of 76 but sufficient retardation and abnormality of behavior for special-class placement. The only recommendation on the physical examination was for dental care.

After placement, the teacher noted a continued inability to adjust to others, irritability, quarrelsomeness, and nervous mannerisms suggesting chorea. She determined to find out if there was any physical cause for the behavior. The child balked at going to clinics, and repeated contacts with the mother showed that she had no power of suasion. She was entirely willing to leave the problem to the teacher. After several efforts the child's co-operation was secured by the teacher and the school nurse. His teeth were taken care of at the dental dispensary. He was given

a thorough pediatric examination. As a result his nose and throat were operated on and he was circumcised. A special Wassermann test showed negative results. Examination and observation were made at a neurological clinic. The child was given medicine, and arrangements were made for midmorning and mid-

TABLE XIII

REPORT OF PHYSICAL EXAMINATIONS AND FOLLOW-UP IN SPECIAL  
AND UNGRADED CLASSES IN ROCHESTER, NEW YORK

	1932-1933	1931-1932	1930-1931
Total average yearly enrollment of special and ungraded classes . . . . .	1272	1311	1375
School examinations . . . . .	433	1392	1440
Recommendations made by examiners . .	1079	1383	1325
Corrections carried out <sup>1</sup> . . . . .	1233	1230	1421
Unsuccessful attempts at correction . . .	166	201	268
Corrections carried out . . . . .			
Dental care . . . . .	674	670	773
Throat care . . . . .	32	68	114
Nasal care . . . . .	19	10	18
Treat goiter . . . . .	0	6	7
Watch goiter . . . . .	4	2	20
Better nutrition . . . . .	227	171	241
Eye care . . . . .	121	151	110
Ear care . . . . .	89	101	75
Treat nervousness . . . . .	13	11	6
Orthopedic care . . . . .	30	25	21
Wassermann test . . . . .	4	1	3
Cardiac clinic . . . . .	14	12	27
Tuberculosis clinic . . . . .	0	0	1
Treat skin diseases . . . . .	6	2	5
Total . . . . .	1233	1230	1421

<sup>1</sup> Note that the number of corrections carried out plus unsuccessful attempts may exceed the number of recommendations made. This is due to the fact that corrections carried over from the previous year were worked on again. Also, attendance at clinic for one defect sometimes disclosed another that had to be followed up.



afternoon pints of milk, also for an afternoon rest period in school. Repeated attempts were made to secure the mother's co-operation in the matter of diet, rest habits, and discipline at home; but the mother proved unreliable.

After six months in the special class with the physical condition improved, it was evident that the home environment contributed to a large extent to the nervous condition of the child and that satisfactory results could not be expected while he was in his present home environment. The next step was to try placement in a good foster home.

That these two cases are only illustrations of what can be done and in some instances is being done in behalf of the physical well-being of all children in special classes is indicated by the report in Table XIII on page 151 of physical examinations made and cases followed up in Rochester, New York, over a period of three years.

#### DEVELOPMENT OF SOCIAL HABITS AND ATTITUDES

The special class from its very beginning has recognized the importance of developing, in so far as possible, emotional stability and normal reactions in the mentally retarded child, although early attempts in this direction were not made in the light of all that is now known in the field of child development. Today it is generally recognized that the development of social habits, attitudes, and emotions is more important than training in school subjects, and that this development should not be left to chance but must be definitely planned for.

This principle is particularly applicable to the education of pupils in special classes. Dr. Francis

Maxfield<sup>1</sup> has said on the subject, "No special class should ignore the importance of mental hygiene. An even temper, a pleasing disposition, and responsive personality count for more in social adaptations, both in school and adult life, than long-division or English grammar. One of the major functions of the special class is to stabilize these boys and girls."

What are the social habits, attitudes, and feelings that the child must develop in order to be happily adjusted? The lists immediately following suggest traits in which the child should be showing some development at each age level. These traits should be evident in a form to suggest the breaking up of general behavior terms into the specific elements involved.

#### HONESTY AND TRUTHFULNESS

Is fair and honest in play.

Is fair and honest in work.

Acknowledges when he has done something wrong.

Does not take things that belong to another.

Returns or reports found articles.

Can be trusted with money.

#### CO-OPERATION

Is willing to do his share when the group is working together.

Realizes that the success of a group undertaking depends on each member's doing his best.

Assists others when they need help.

Works well with leaders.

Is attentive to work at hand.

Is willing to put aside an individual preference for the sake of the group.

Refrains from teasing or annoying others.

<sup>1</sup> *Objectives for the Special Class in the Public Schools* (reprint from *Mental Hygiene Bulletin*, September 1924).

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### GENEROSITY AND UNSELFISHNESS

Shares with other children articles and experiences.

Shares "turns" in games or activities.

Is interested in making things for children less fortunate than he (hospitals, Near East Relief, etc.)

Cares for stray animals.

Shares time. Helps with tasks at school and at home willingly and cheerfully.

Recognizes success of others.

### GOOD HUMOR AND CHEERFULNESS

Realizes that individual good humor contributes to the cheer and happiness of the group.

Is a good loser in games and sports.

Does what is expected of him cheerfully.

Accepts criticism cheerfully.

Is good-natured with other children.

### COURTESY

Displays attitude of courteous consideration of others on many specific occasions — in the classroom, the school corridors, the library, the school assembly, the clinic, etc.

### CONFIDENCE

Is willing to try new things.

Is willing to discuss with others how well he has done a thing.

Explains to visitors what he is doing.

### COURAGE

Will face difficulty.

Will try new things.

### SOCIABILITY

Likes to be with other children.

Tells others about his play and his work.

Has play friends.

Enjoys co-operative work and play.

Some simple rules for the teacher to observe in building such habits and attitudes may be very briefly suggested here.

1. Provide an environment conducive to good behavior — well-ordered regularity in routine, suitable work and play, wise teaching guidance. Chapters XI to XVI of this book discuss in detail conditions that will promote desirable social habits and attitudes.

2. State verbal directions and suggestions effectively, making them positive, definite, and short enough to be understood. Learning difficulties often lie in the fact that the teacher does not realize that the child does not understand. Emphasize and repeat what the child is to do rather than what he is to avoid.

3. Be sure that the child understands what he is striving for. He must understand that behavior is not made up of vague qualities suggested by the words "good," "bad," "polite," but of habits that he is developing in terms of specific actions. "Self-control," "courtesy," etc., have no meaning for the child until he has associated numerous specific behavior habits with these terms.

4. Associate satisfaction in the child's mind with having acted in a desirable way. Approve desirable behavior. Avoid finding fault with what is insignificant. Know when to overlook things.

5. Associate dissatisfaction with undesirable tendencies by letting the child take the consequences of his acts, by withholding approval, or withdrawing a privilege.

6. Provide many situations where the desirable tendency can function. Telling the child what is right, without giving the opportunity for practice, is of little avail.

7. When unfavorable tendencies appear, help the child to find a proper outlet for his energy by providing enough of the right kind of stimuli.

8. Talk things over with the children and gradually

develop in them an understanding of why certain things are expected.

9. When study and effort on the part of the school have been expended in helping the child to overcome undesirable behavior and it still persists, the matter should be referred to a child-study clinic.

The following incident indicates how these methods of building proper habits and attitudes can be developed in a classroom situation.

When John, aged ten and a half years, entered the special class, he was rude and unthoughtful of others. He pushed the boy next to him when the group went out for lunch. He interrupted the teacher and children when they were busy. He was likely to take tools and materials away from another child if they appealed to him, or to destroy another child's work. The mother reported that at home he showed the same tendencies and that nothing was gained by telling him he must be a "good boy." Because John was an active type of child, the teacher first saw to it that the day's program provided outlets for his energy — games, songs, rhythm, building and construction with materials. She frequently called attention to the other children's acts, as they occurred, as "being thoughtful" and "being courteous" and as the kind of behavior that every child in the room should work to maintain. The teacher developed with the group a chart in which the following pupil expressions appeared. These were kept before the attention of the class :

Being courteous.

I think of other children and I do not push them.

When I want something from someone else, I ask for it and say "Please."

When anyone gives me anything, I say, "Thank you."

I am careful of my own work and of other children's.

I wait until another child has finished before I say anything.

I do not interrupt the teacher when she is talking or when she is busy.

The classroom situation was such that the children worked informally and were responsible for getting and putting away their materials, so that John had, with the others, many occasions for practicing the habits suggested in the chart.

When John's overt acts caused annoyance to others, attention was called to the rules for "being courteous" and to the way other children behaved in like situations and so helped each other and the group. John was asked in a simple, direct way to try again to do what the others were learning to do. When he made the effort and succeeded, the teacher commended him and told him how he was helping himself and others. John was given a "Being Courteous" card on which the class rules were listed and a mark entered for each success.

The plan was explained to the mother and John took a note home each day that he had succeeded. When John did not try, and snatched materials, for example, he was not allowed to do any work for that period and no note of commendation went home. At the end of four weeks there was noticeable improvement in John's behavior in school and some improvement at home. John's mother, the teacher, and John then made out a plan of what John would try for at home. Thus by persistent, careful teaching John learned to improve in self-control and to conform to the group code.

## ADJUSTMENT BETWEEN SCHOOL AND HOME

The teacher finds the explanation of much of the child's behavior in the home and neighborhood conditions. The hygienic and economic conditions in the home, the mental ability of the parents, their emotional control, their interest in the child's welfare, their ambition or lack of ambition for him, their moral standards — all vitally affect the child's development. In all these respects the environments of the majority of slow-learning children are probably not so conducive to the development of desirable social traits and health habits as are the environments of the majority of normal children. The parents of the mentally retarded are often inferior mentally, with resulting below-average home conditions. Where undesirable home conditions are present — crowded quarters, lack of privacy, no place to play, poor household management, lack of regularity, overworked, irritable parents, or fearsome parents, there are correspondingly few opportunities to practice desirable habits. When the social standards of foreign-born parents are at variance with American practices, the slow-learning child is at a loss to understand what is expected. There may, of course, exist favorable conditions along with unfavorable ones. In the case studies cited in the previous chapter there is evidence of a variety of such favorable and unfavorable environmental influences. The degree of individual educational success will depend on the teacher's taking account of these various influences as she works for improvement in each child.

The teacher's contacts with the home should be frequent, to enable her not only to understand the child better but also to (1) interpret the school and its purpose to the home, (2) develop desirable family atti-

tudes toward the child, (3) secure, if possible, co-operation of the home in the development of right habits, attitudes, and appreciations in the child, (4) discover serious home conditions that should be investigated, and (5) offset in school some of the inadequacies of the home.

The teacher should interpret the school and its purpose to the home in a sympathetic manner. She should approach the home or the parent in a spirit of friendliness, helpfulness, sympathy, and co-operation. Her contact should supply a close human relationship that will make for mutual confidence and co-operation among parent, child, and teacher. This home contact affords an opportunity to make the parent realize that the teacher's chief concern is the well-being and progress of his child. If the teacher succeeds in securing the parent's confidence in and co-operation with the school's efforts, the possibilities for the child's satisfactory adjustment are greatly increased.

The attitude of the various members of the family group has a profound influence on the child's personality. Often the slow child does not have a feeling of security in the home because of the family's failure to understand why he does not respond like other children. He may be characterized at home as "careless," "lazy," "dumb," or "perverse," compared unfairly with others, and nagged or scolded unreasonably. As a result he feels out of harmony and insecure in the family group. It is particularly important, therefore, that he should experience success in school and that he should have contacts with a teacher and classmates who can give him a feeling of security. But the special-class teacher should also work toward changing the attitude in the home. As the teacher interprets the child's ability to the parents, helping them to understand the



reasons for his slowness and to recognize his assets, this attitude of faultfinding on the part of the family may often be changed to one of understanding and appreciation. When the parents see the results of continuous careful daily work under close teacher guidance, they can better appreciate the child's efforts and his progress, however slow it may be. Where they continue to be exacting and intolerant, the wise teacher is doubly conscious of the school's part in offsetting this inadequacy.

The more unified the effort of home and school, the better from the standpoint of the child's development. It is difficult for the child to be obedient, co-operative, and trustworthy if home and school are setting up conflicting standards and stimuli. He may try to please one and disregard the other, or become discouraged and try to please neither. Hence, it is important that school and parents should be agreed on what they expect from a child. It will be well for them to define and agree on such definite standards of conduct as coming to school clean and on time, bringing lunch money once a week, banking regularly in the school bank, attending the clinic, attending the library story hour, getting the required amount of sleep each night, watching weight, keeping track of the diet for a week, and so on.

The wise teacher who knows the home knows the degree of co-operation that may reasonably be expected from it. In some instances she will be aware that all she can hope for is the parents' approval of the aims of the school. She will know that she must be largely responsible for carrying out desirable plans.

When the teacher finds in the home economic, hygienic, or moral conditions that she believes require attention, she should refer the matter to the proper

authority for investigation. In her visits she should note any such serious inadequacies or harmful influences.

The school must consider itself responsible for providing an environment that insofar as possible affords any needed opportunities the home may fail to give, and for seeing that home conditions are bettered wherever this is possible.

#### RECORDS AND THEIR VALUE

The teacher who is trying to understand and to guide child development in the ways that have been suggested needs a method for recording effort and progress. She must keep notes on the physical care, home adjustment, educational progress, and so on, of individual children. Schools are recognizing more and more the need for recording this kind of information in permanent and cumulative form for all children. Because of the long-recognized need for individual study of the mentally retarded, detailed records for this group have been kept by many schools for some time. These records are invaluable during the child's school life as an aid in interpreting the child's behavior and his accomplishments, in determining promotions to more mature groups and to types of prevocational training, and in determining in doubtful cases whether or not institutional placement is advisable. In after-school life they may be an aid in vocational adjustment and in determining a suitable course of treatment if the child presents a social problem.

An informal method is suggested on page 162 for keeping individual pupil records that will include (1) the teacher's yearly plan for treatment of each child developed from an analysis of his needs, (2) a running record of actual treatment, development, and progress,

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and (3) a cumulative record on which the teacher can summarize from her plans and running record the pupil's progress year by year.

### TEACHER'S YEARLY PLAN

*A tentative guide to be reviewed frequently and changed as needed.*

Name . . . . . Address . . . . .

School . . . Class . . . Year: from . . . to . . . . .

No. of terms of special-class attendance . . . . .

M.A. . . . C.A. . . . I.Q. . . . Date of Examination . . . . .

#### CHILD'S NEEDS

#### SUGGESTIONS FOR MEETING NEEDS

1. Social and emotional
  - (a) Home and family relationships: Consider kind of neighborhood, hygienic, economic, moral, influences in home; attitudes of family group; associates.
  - (b) Personality \*

1.
  - (a)
  - (b)

2. Physical: Consider size, growth, impairments, habits of personal care and health maintenance.\*

2.

3. Educational: Consider development in tool subjects, social concepts and orientation, industrial arts, play, and recreational interests.\*

3.

Teacher . . . . . Principal . . . . .

\* Refer to curriculum standards. Is child at, above, or below suggested attainments for age level and ability?

The running record may be kept by attaching to this plan form one sheet for each of the three phases of development outlined: (1) social and emotional, (2) physical, (3) educational. The teacher enters on these dated records of treatment, development, and accomplishment as the year progresses.

The cumulative record will consist of statements summarized at the end of each year from the running records of treatment and development under the three headings: (1) social and emotional, (2) physical, (3) educational.

Any method or plan for keeping records will be dependent on the local organization, the curriculum, and other conditions of the immediate situation. The items listed in the form presented here do not constitute complete record forms, but are rather suggestive of how records may be developed to aid in interpreting and guiding the child's behavior and progress. The teacher will use them in consulting from time to time with her principal and supervisor, also with any other persons working directly with the child, as to plans and progress. Dependent on the individual pupil conditions and problems, some records will be longer and more detailed than others. These plans and running records are to be considered the teacher's working sheets and remain in the classroom. At the end of the year the cumulative record may be filled out by the teacher and a copy forwarded to the principal's or supervisor's office.

As records of scholastic marks and grades give place to records that give a more complete and descriptive picture of child growth, it becomes more difficult to devise satisfactory methods and forms for recording progress. Cumulative record forms present a special challenge, since they must be succinct but adequate,

easily readable and easily comparable from year to year. Progressive schools generally are experimenting in the matter of developing effective records.<sup>1</sup>

With such careful study, observation, and planning as is suggested in this chapter, the teacher develops a vital interest in child behavior, welcomes the stimulation that new problems bring, and grows in ability to meet individual needs. She then comes to view the classroom environment, the curriculum, materials, and methods that are discussed in the succeeding chapters as a means to the total development of the child, and worth while only insofar as they originate in the needs of the child and contribute to his development.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Caroline Zachry says, "Personality is an educational responsibility." Discuss this statement.
2. Why should the physical well-being of the child be the first consideration of education?
3. What plan would you make for follow-up work in regard to the health of your pupils if you were teaching in a small school organization that did not have a health department or a school nurse?
4. Describe what you consider an average home, an above-average home, a below-average home. Compare your descriptions with those of two other persons. Why is it better in attempting to give an idea of a child's background always to describe conditions rather than merely to rate a home as average, above, or below?
5. Discuss the teacher's approach to the home that has opposed special-class placement because it will not admit that its child is slow.
6. What answer would you make to the teacher who says, "What is the use of making a home visit? I can find

<sup>1</sup> See Margaret W. Moore, *Cumulative Educational Record Form for Elementary Schools* (American Council of Education, Washington, D. C.).

out more and all I need to know about the child's home and family by talking with the child as he is helping me after school."

7. Make an outline of Chapters I, III, and IV of Morgan's *Psychology of the Unadjusted School Child* (reference below). Summarize any changes in your attitude on discipline that result from carrying out this assignment.
8. List five situations that may arise in a classroom to stimulate anger in a child but that might have been avoided.
9. Study and discuss the various record forms suggested in this chapter.
10. List recent trends in education which call for revised forms and methods in record keeping.

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## *Chapter Nine*

### GENERAL ATTAINMENTS AT VARIOUS AGE LEVELS

BEFORE planning a definite program for the education of the slow-learning, it is important to have well in mind a general picture of what this group may reasonably be expected to achieve at various stages in their school experience.

The general physical, social, and mental development of mentally retarded children at succeeding age levels has been discussed in a previous chapter. In this chapter the educational attainments that may be expected from children at these same age levels will be outlined. The information, attitudes, habits, and skills indicated here as "attainments" are those in which observable growth should take place at the levels designated. The degrees of development suggested in each of these will not only be generally possible to realize with these children, but they are also recommended as ideal objectives for the various groups. They imply an integrated program that is continuous and progressive from year to year, and they are designed to promote progress toward those objectives that are outlined in Chapter V.

The attainments outlined must be considered as indicating in only a general way what may be expected from mentally retarded children. They are those that may generally be expected from pupils with I.Q.'s above 55 or 60, since this group makes up the greater part of any special-class enrollment — those less capable represent only a small minority, 7 per cent in Rochester, of the special-class group.



It must also be remembered that characteristics of the child other than intelligence will influence his attainment; some pupils with I.Q.'s well above 55 will be handicapped by some other factor in their make-up. In certain school situations, too, shortness of the school day, inadequate facilities, or some other condition, may interfere with the realization of the attainments here defined. The standards here may, however, be considered as generally legitimate and reasonable.

In the outline following, attainments are defined for the three special-class groups — primary, intermediate, and prevocational. General chronological- and mental-age parallels for these groups are indicated. These attainments are also classified according as they contribute to the realization of the various objectives set out in Chapter V<sup>1</sup> — the development of healthy bodies and personalities, of working knowledge of the tool subjects, of ability to find satisfying and satisfactory life in the home and the community, of ability to function effectively in industry, and of capacity for wholesome and satisfying use of leisure time. There will, of course, be overlappings in any of these groupings. They are intended only to suggest general principles.

<sup>1</sup> See pages 62–73 for discussion of these objectives.

# GENERAL ATTAINMENTS AT SUCCESSIVE LEVELS IN PUPILS' GROWTH

PRIMARY UNIT <sup>1</sup>	INTERMEDIATE UNIT <sup>1</sup>	PREVOCATIONAL UNIT <sup>1</sup>
CHRONOLOGICAL AGE 8 TO 11	CHRONOLOGICAL AGE 11 TO 13 OR 13½	CHRONOLOGICAL AGE 13 OR 13½ TO 16
MENTAL AGE 4 TO 8	MENTAL AGE 6-0 TO 9-0	MENTAL AGE 7-0 TO 10-0

## HEALTH: PHYSICAL AND MENTAL

1. Use of and regard for simple health habits and safety rules; some sense of responsibility for carrying out some of the simple health habits and safety rules; a feeling of friendliness toward nurses and doctors.
1. Use of and regard for simple health habits and safety rules; some sense of responsibility for carrying out personal health habits; some sense of responsibility for contributing to the health and safety of others; a beginning understanding of the structure of the body and its organs as a background for the "why" of health habits; co-operation with nurse and doctor in remedial treatment of physical defects.
1. The perfecting of health and safety habits; understanding in a very simple way the structure of the body and its organs as a background for understanding health habits; some degree of participation in such home practices as the selection and preparation of food; understanding of and some sense of responsibility for health practices and the prevention of disease; rendering simple first-aid service in case of accident; knowledge of health services provided by the city and how to use them; realization of the value of consulting nurse or doctor as need arises.

<sup>1</sup> The primary and intermediate units may be thought of as being made up of pre-adolescents and the prevocational unit of adolescents.

2. Development of habits and attitudes of obedience, honesty, self-control, thrift, orderliness, industry and perseverance, co-operation, cheerfulness, courtesy, unselfishness, punctuality, reliability in specific home and school situations.

2. Understanding and development of habits and attitudes of obedience, honesty, self-control, thrift, orderliness, industry and perseverance, co-operation, cheerfulness, courtesy, unselfishness, punctuality, reliability in a greater number of situations, and self-confidence.

2. (a) Understanding and development of obedience, honesty, self-control, thrift, orderliness, industry and perseverance, cheerfulness, courtesy, unselfishness, punctuality, noticeable growth in reliability, and self-confidence.

(b) Power of partaking in co-operative enterprise, of responsibility for a job undertaken, of estimating and comparing values in time and money, of judging satisfactory workmanship, of making the most of one's assets.

(c) Interest in and enjoyment of company of others, ability to form the right kind of friendships, to be a part of a social group.

## *WORKING KNOWLEDGE OF TOOL SUBJECTS*

1. Power to express meanings and desires in words and through concrete materials — listening, talking, telling, playing, drawing, constructing, writing.
  2. A desire to learn to read, an interest in books; the establishment of a beginning reading foundation; ability to read stories of first- and second-grade difficulty.
  3. Interest in number and its uses; counting; use of simple combinations and subtraction facts.
  4. Power to write name and to copy interesting bits of information.
1. Hearing and speaking vocabulary and power to express and comprehend ideas — listening, talking, telling, reporting, dramatizing, and constructing.
  2. Reading vocabulary and reading ability; sense of reading for information and for enjoyment; ability to read material of second- and third-grade difficulty; familiarity with the library and its uses.
  3. Knowledge of number facts and processes and their application to personal experiences: ability to add, subtract, multiply, and divide simple numbers, to use common measures, to recognize coins, to make simple change.
  4. Desire to express ideas in writing; ability to write neatly and legibly in preparing books, charts, letters, etc.
1. Hearing and speaking vocabulary; power to tell others of personal experiences; greater comprehension of news events and of life's activities generally.
  2. Reading vocabulary and reading ability; habit of reading for information; habit of reading selected stories and library books; familiarity with the library and its uses; interest in and ability to read daily newspaper; ability to read material of simple third-, fourth-, or fifth-grade difficulty.
  3. Knowledge of number facts and processes as they apply to experiences undertaken; use of addition, subtraction, multiplication, and division, and of simple fractions; finding simple interest; buying and selling; use of common measures; concepts of time, distance, amounts, weight, and size; use of number in shop and home-economics problems.
  4. Desire and ability to express ideas in writing neatly and legibly in preparing notebooks, charts, letters, etc.

## **FAMILY AND VOCATIONAL LIFE**

1. Use of such mediums as paper, clay, wood, and cloth, to carry out activities; simple hand skills in the use of the tools and materials to carry out activities.

2. Beginning appreciation of members of family and of ways to help in home.

1. Use of paper, clay, wood, cloth, and other mediums such as cement or leather, to carry out activities and make useful products

2. Simple hand skills in the use of tools and materials listed above.

3. Knowledge and appreciation of tools and materials, as to where they come from, how they are prepared, what they cost.

4. More specific knowledge of tools and skills to serve as a background for later prevocational training

5. Knowledge and skills as they contribute to home life.

1. Simple elementary knowledge and understanding of labor and industry and the part they play in the daily life of the community; of industries in the community; of labor regulations, of suitable jobs open to boys and girls.

2. Knowledge, skills, habits, and attitudes that are prerequisite to wage earning.

*For boys.* Growth in participation in co-operative shop work, understanding of shop output, relationship of school shops to industry in the community, use of machinery, skill of hand in tool processes, habits of good workmanship and reliability.

*For girls.* Co-operative work in lunchroom, cafeteria, etc.; growth in ability as a homemaker, in preparing and serving meals, caring for young children, choosing and making simple clothing and caring for and repairing it economically.

## COMMUNITY LIFE

1. Participation in and enjoyment of experiences in the immediate environment — with groups in the home, school, and neighborhood, a beginning appreciation of people who help us — the postman, the fireman, the mailman, the grocer.
1. Knowledge of the life of the home, the neighborhood, and the city and the dependence of these groups on other people for food, shelter, and clothing; the knowledge that the world extends far beyond the immediate environment, that many of the things in daily use come from far-away lands, that other people live differently from the way we do; orientation — concept of community and the world, ability to read and interpret simple maps.
1. Understanding and knowledge of life in immediate community, in different parts of the nation, and other countries in relation to the needs of food, shelter, and clothing; the difference between a city, a town, a state, and a country; reading of maps and locations, concepts of distance; some realization of inventions and improvements, of difference between life now and long ago; interest in current events; obedience to community laws.

## **USE OF LEISURE TIME**

1. Participation in and enjoyment of games, poems, stories, songs, rhythms, band and orchestral music.
  1. The appreciation and enjoyment of games, poems, stories, songs, rhythms, band and orchestral music; the use of recreational facilities such as the library and the park; the enjoyment of outdoor activities; the beginning of hobbies and interests.
2. Observation of simple facts about the phenomena of nature and their effect on plant life, such as the light and warmth of the sun, the rain, the snow, and the wind; the care of pets; a feeling of interest and friendliness for living things.
  1. (a) The appreciation and enjoyment of poems, stories, plays, team games, songs, rhythms, band and orchestral music, dancing.
  - (b) The use of recreational and educational facilities, the library, the park, the settlement house, night schools, and group organizations like the "Y," the Scouts, the radio.
  - (c) The enjoyment of outdoor activities.
  - (d) The development of a hobby.
2. Knowledge through observation and simple experimentation of the laws of cause and effect in the phenomena of nature, an understanding in a simple way of their relationships to his own life; a feeling of interest in and friendliness for living things, enjoyment of gardens and hikes to explore nature.

## QUESTIONS AND SUGGESTIONS FOR STUDY

1. Review the development of mentally retarded children at 8, 9, and 10 years, as outlined in Chapter II. Are the attainments outlined for these ages commensurate with the children's expected development?
2. Follow the same procedure for age groups 11-12, 13, 14, and 15 years.
3. How is a general view of expected attainments helpful to the curriculum builder, the supervisor, and the teacher?
4. These attainments are not outlined in order of their importance. What would be the difficulty in attempting such an arrangement?
5. Choose some one group of attainments listed in Chapter II and develop a list of specific accomplishments that would contribute to its realization.
6. What conditions make it difficult to find references to list for this chapter?

## READING REFERENCES

See list of reading references at end of Chapter X, page 193.



## *Chapter Ten*

### SPECIFIC ATTAINMENTS AT VARIOUS AGE LEVELS

THE outline of general attainments made in the preceding chapter indicates the growth anticipated for slow-learning children at succeeding age levels. It suggests in a general way what the school may strive to accomplish with these children at the several ages. But it is evident that numerous experiences and numerous specific learnings must take place in order to realize these attainments. The immediate problem for the teacher must always be to provide such learning activities term by term that progress toward the general attainments may be made. In order that she may plan these activities with a view to such continuous growth, and particularly that she may always keep clearly in mind the needs and capacities of her pupils as she plans the daily activities of the classroom, it is important that such general statements of aim should be broken up into specific definitions of attainments for the several ages.

Rochester, New York, as part of a city curriculum study, has attempted to outline such specific attainments for successive age levels. The plan developed is outlined here first in relation to the tool subjects, then to health and the other educational goals that have been previously suggested. It will be found that the attainments listed in this outline are superior to such arbitrary standards as, for example, expectation of second-grade achievement for all pupils of seven-year mentality in that they make provision not only for mental ability as determined by performance on a test

but also for the total ability and all-round development of the child.

Lists of tentative attainments for the tool subjects — reading, English, arithmetic, and spelling — were set up, in a progressive series, for each chronological age, beginning with the age of seven years and continuing to sixteen. In devising these attainments, physical and mental growth and social development at each chronological-age level were considered. Pupils with intelligence quotients of between 55 and 65 and those with intelligence quotients of between 66 and 75 were considered as indicating very roughly two ability groups within the special class.<sup>1</sup>

Pupils with intelligence quotients of from 55 to 65 will naturally not be likely to realize at any age level so many attainments as will the more capable group. The minimum standards defined suggest what may be expected of the group of pupils with I.Q.'s of from 55 to 65; additional standards are suggested for pupils in the more capable group — those with I.Q.'s of from 66 to 75. The fact must, however, be emphasized that factors other than intelligence are always operative and that there can be no definite demarcation of groups on the basis of intelligence alone. The two groupings given here merely indicate certain general differences in ability that will probably appear among the majority of pupils.

The attainments outlined suggest what may be expected of the majority of children of a given age and ability, but they must always be considered by the teacher in relation to the individual child. The important thing is that each child must be helped to accomplish all that he can. Where the standard set is

<sup>1</sup> The case of pupils with I.Q.'s below 55 is discussed in the footnote on page 191.

beyond the child's ability or does not call for the fullest exercise of his powers, a new one must be established. There will be the occasional child who will be found to have failed to reach the standards of his group because of physical immaturity, sensory defects, lack of schooling, repeated habits of failure in the grades, or adverse home conditions. For him there is need of intensive individual study and treatment on the part of the teacher.

Such a carefully developed list as that presented here of expected and desirable attainments at different age levels should prove helpful to both teacher and pupil. It will define goals of accomplishment toward which both teacher and child may consciously strive from week to week and from year to year. The attainment levels set up for the ages from seven to sixteen years also suggest a picture of the accomplishments ultimately possible for the individual child and indicate the length of time that may be expected for their accomplishment. Consideration of these may keep the teacher from exerting pressure on the child to attain standards in an unreasonably short time or beyond the capacity of his age level; it will encourage her to allow the time that his level of ability requires for the attainment of each goal and to place emphasis on his real and present needs.

In their revised form the reading attainments in the Rochester outline appear as follows:

#### SPECIFIC ATTAINMENTS IN READING <sup>1</sup>

*Chronological Ages 8-0 to 8-11*

*Mental Ages 5 to 6 <sup>2</sup>*

Shows a desire to learn to read.

Makes increasingly frequent use of past experiences in conversation and in the interpretation of pictures.

<sup>1</sup> Minimum attainments in these lists are set in roman type. Additional attainments for more capable pupils — those with I.Q.'s from 66 to 75 — are in italic type.

<sup>2</sup> Mental ages given must all be considered approximations.

Attempts to read words and stories that tell about pictures.  
Realizes that labels about the room, street signs, house numbers, billboards, etc., tell something.

Recognizes the need for the printed word.

*Tells story about picture he makes.*

*Enjoys making his own book of pictures and stories.*

*Associates from twenty to fifty words with their symbols.*

*Goes of his own volition to library table and selects a book to look at.*

*Begins reading in primer.*

**Chronological Ages 9-0 to 9-11**

**Mental Ages 6 to 7**

Reads from blackboard and chart simple stories related to his own interests.

Tells, or writes and reads, story about picture he makes.

Enjoys making his own book of pictures and stories.

Associates from twenty to fifty words with their symbols.

Goes of his own volition to library table and selects a book to look at.

Reads from blackboard or charts: greetings, own name, simple directions.

Begins to read pre-primer story books, charts.

*Reads aloud distinctly.*

*Shows comprehension by grouping related words instead of reading word by word.*

*Desires to read a story because of interest in the pictures.*

*Answers oral questions pertaining to the text.*

*Gives with the aid of a few questions, if necessary, coherent reproductions of short stories read; may include dramatizations.*

*Carries out simple written directions.*

**Chronological Ages 10-0 to 10-11**

**Mental Ages 6-6 to 7-6**

#### HABITS AND SKILLS

Has habit of first reading over silently what is to be read orally.

Shows comprehension by grouping related words instead of reading word by word.

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Desires to read a story because of interest in the pictures.

Answers oral questions pertaining to what is read.

Reads labels on objects in room.

Reads from blackboard or chart : simple directions, simple announcements, greetings, many stories developed co-operatively by class.

*Answers a few short written questions pertaining to the text.*

*Selects exact words, phrases, and short sentences in answer to questions.*

*Asks simple questions pertaining to content of what is read.*

*Reads titles of books.*

*Attempts to use table of contents.*

*Carries out written directions.*

*Dramatizes story.*

*Recognizes, when presented in a different context, words and word groups that occur most frequently in the stories read in the basal reader.*

*Is interested in newspaper :*

*Brings in pictures from newspapers.*

*Knows where to find, and reads, weather report.*

### CONTENT DIFFICULTY

Reads from primer.

*Has first-reader vocabulary. Begins second reader.*

*Chronological Ages 12-0 to 12-11*<sup>1</sup>

*Mental Ages 7 to 8-6*

### HABITS AND SKILLS

Shows comprehension by grouping related words instead of reading word by word.

Desires to read a story because of interest in the pictures.

Answers oral questions pertaining to the text.

Answers short written questions pertaining to the text.

Selects exact words, phrases, and short sentences in answer to questions.

<sup>1</sup> Standards are omitted for chronological ages 11, 13, and 14 because of lack of space. Study of the standards outlined here will guide the teacher in developing these others.

Reads titles of books.

Uses table of contents to find a story.

Carries out written directions.

Dramatizes story.

Without reading questions orally, answers written questions pertaining to the text.

*Shows facility in use of table of contents in finding stories.*

*Carries out written directions independently.*

*Plans and gives simple dramatization of story.*

*Selects and reads parts of a story that make greatest appeal.*

*Reads silently in context approximately eighty-seven words or more a minute.*

# VOCABULARY

Reads from blackboard or chart :

Simple directions and announcements.

Sentences pertaining to class interests.

Questions pertaining to selections that have been read.

Co-operative class stories.

Familiar songs and poems.

Recognizes, when presented in a different context, the words and word groups that occur most frequently in the stories read in the basal text.

Is interested in newspaper :

Brings in pictures, weather reports.

Knows name of paper read.

Reads familiar information in advertisements.

*Increases his reading vocabulary through types of reading dealing with experiences common to the group.*

*Makes a list of unfamiliar words in a story read independently.*

*Is interested in newspaper. Knows where to find in it:*

*Name.*

*Weather report.*

*Advertisements.*

*Want ads.*

*News items.*

*Keeps a list of books read.*

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### CONTENT DIFFICULTY

Second-grade reading vocabulary and comprehension.

*Third-grade reading vocabulary and comprehension.*

***Chronological Ages 15-0 to 15-11***

***Mental Ages 8-6 to 10-0***

### HABITS AND SKILLS

Reads aloud distinctly.

Asks and answers oral questions pertaining to content of what is read.

Answers written questions pertaining to text.

Selects exact words, phrases, and short sentences in answer to questions.

Reads titles of books.

Uses table of contents in finding stories.

Reads and follows directions independently.

Dramatizes story.

Is interested in reading short story independently when an interesting part has been read or told to him, or an interesting paragraph from it is written on the board.

*Uses table of contents readily in locating information and stories.*

*Reports on selections read independently in books brought from home or found on library table.*

*Selects and reads parts of story that appeal to him.*

*Is interested in reading book or simple magazine article independently when interest in it has been aroused.*

*Realizes that one may gain information from reading.*

*Reads silently in context eighty-seven or more words per minute.*

### VOCABULARY

Recognizes a dictionary, knows what it is used for.

Uses city and telephone directories.

Is interested in newspaper. Knows where to find in it:  
Name.

Weather report.

Want ads.

Advertisements.

News items, local and foreign.

Theater news.

Knows something about good magazines.

Reads common signs in familiar environment; i.e., street signs, traffic signs, grocery or candy store notices, etc.

Shows increased ability in such sign or direction reading as is needed in department stores, cafeterias, libraries, railroad stations, movies, work shops, etc.

Looks for a sign or direction when he is trying to find his way or to discover how to act in a strange environment.

Keeps a record of books read.

*Makes use of glossary, dictionary, and directory.*

*Reads some items from newspaper independently; reports on what he has read.*

*Realizes sources of good magazine reading:*

*Knows titles and subscription rates.*

*Recognizes types of material—story, sport, fashion, etc.*

*Knows about card catalogue in library.*

#### CONTENT DIFFICULTY

Third-grade or simple fourth-grade reading material.

Increased amount of material related to interests.

*Reading of fourth- and fifth-grade difficulty.*

Specific attainments for English and arithmetic were also worked out in the Rochester study. Excerpts from the lists prepared in these subjects may be noted in the teacher's plans reproduced on pages 260 to 313.

For spelling, a graded vocabulary of 785 common basic words was chosen from the Ayres-Buckingham spelling list, the five hundred most common words from the Commonwealth list, a graded spelling list that had been compiled from experience with special-class pupils, and the spelling lists used in the regular grades. The teacher is expected to supplement this vocabulary with any common words that the child needs in his daily work — in preparing material, for example, for charts, booklets, records, or letters.



Attainments for health and hand skills are set up for three chronological age groups, but are not differentiated as to I.Q. levels inasmuch as accomplishment in these fields is more dependent on chronological age, motor co-ordination, and experience than on intelligence. The more capable child will understand more of the information related to health than will the less capable, but the important element for all is habituation and this the less capable pupils may achieve as well as the child of higher I.Q.

Excerpts from the health attainments for age groups 8 to 11, 11 to 13, 13 to 16, follow.

#### HEALTH ATTAINMENTS

*Chronological Ages 8-0 to 10-11*

*Mental Ages 6, 7, and 8*

Acquires and practices health-getting and health-keeping habits:

Has eleven and a half to twelve hours of sleep.

Sleeps with windows open.

Plays out of doors.

Acquires and practices healthful food habits and begins to know some of the proper foods for growth and health:

Drinks milk.

Eats a leafy vegetable at one meal a day and recognizes several varieties.

Eats some fruits every day. Recognizes several varieties.

Has knowledge and appreciation of corrective health measures:

Drinks milk and takes rest if underweight.

Goes to dispensary for care of teeth.

Meets standard for daily morning health inspection.

Participates in various devices for recording health and cleanliness habits.

Realizes that the school nurse is a friend and seeks her help when needed.

Engages in free play and in organized games; responds to different rhythms.

*Chronological Ages 11-0 to 13-0**Mental Ages 7, 8, and 9*

Continues to practice health-getting and health-keeping habits.  
Continues to practice healthful food habits and knows the proper foods for growth and health.

Meets the standard for daily morning health inspection and participates in various health-recording devices.

Has made noticeable progress in conforming to accepted standards of personal hygiene and cleanliness, including manicure and care of hair.

Understands the importance of daily health inspection, semiannual visits of dental hygienists, and yearly medical inspection.

Understands something of the work of school nurse as one who :

Gives assistance in minor ills.

Advises and acts in emergencies in school.

*Chronological Ages 13-0 to 15-11**Mental Ages 8, 9, 10*

Knows the value of and has formed personal health habits.

Cleanliness

Bathes regularly (tub, shower, sponge).

Takes proper care of hands :

Washes hands before eating, and after going to toilet.

Dries hands thoroughly.

Uses hand lotion for dry or chapped hands.

Food habits

Drinks required amount of milk and water.

Does not drink tea or coffee.

Breathing habits

Has information and habits concerning disease prevention.

Knows that various communicable diseases are preventable.

Knows that clean hands are important factors in prevention.

Has knowledge of public health services.

Health service provided by Rochester for school children.

School service — high standards of sanitation.

Dental service: hygienist; dental dispensary.

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Health service provided by Rochester for its citizens.

Pure water; pure-food laws; pasteurized milk, etc.

Has a general understanding of the structure and functioning of certain organs and parts of the body as a background for the practice of health habits.

Teeth.

Digestive tract.

Elimination.

Engages in physical activities.

Team games and group games.

Competitive feats, like jumping, running.

Folk and social dancing.

Following the list of health attainments from which the above items are taken, there is in the Rochester report an outline of such habits and attitudes having to do with mental health, personality, and conduct as good humor, confidence, courage, honesty, self-control, co-operation, and so on.

Excerpts are given below from the list of attainments outlined for the hand skills. This list by no means suggests all the hand skills that the child may develop, but suggests those most commonly found useful to him. The teacher will supplement this list as the problems and needs of the individual child suggest additions.

### ATTAINMENTS IN HAND SKILLS

#### (Industrial Arts)

*Chronological Ages 8-0 to 10-11*      *Mental Ages 6, 7, and 8*

Has purpose and increased desire to express self in clay, plasticine, paper, paints, crayons, cloth, and wood, with some plan as to details.

Makes purposeful use of materials readily available in home environment.

Expresses human and animal form in action.

Mixes orange, green, violet, from primary colors.  
Applies secondary colors in flat wash.  
Selects pictures suitable for a particular purpose.  
Cuts letter forms from squared paper.

## GIRLS

Uses basting, running, and cross stitches.  
Folds wide hem.  
Runs simple seams.  
Knows the use of a pattern for a simple article.

## BOYS

Saws wood with some degree of accuracy.  
Recognizes and uses hammer, coping saw, back saw, files, bench hook.  
Recognizes and makes proper use of sandpaper, brads, nails, glue.  
Assembles problems of two or more parts.  
Applies water paint to wood models evenly.

*Chronological Ages 12-0 to 13-11      Mental Ages 7, 8, and 9*

Makes or chooses definite plan for carrying out self-expression.  
Applies ideas of perspective to illustration.  
Makes application of knowledge of color harmony in manual arts problem.  
Recognizes warm and cool colors.  
Uses ruler and measures one-half inch.  
Makes poster using illustration and letter cutting.

## GIRLS

Makes practical and skillful use of following stitches :  
    basting, running, backstitching, overhanding.  
Cuts simple cotton undergarment or apron.  
Gains ability in the following processes : hemming, French seaming, sewing on hooks and eyes, buttons, and snaps.  
Gains skill in simple mending processes.  
Knows how to remove stains from clothing.

## BOYS

Knows how to use and care for the following tools: block plane, smoothing plane, file, drill, brace and bit, mallet, chisel, cross cut, rip, and back saw.

Squares stock with fair degree of accuracy.

Can plan and assemble model of several parts.

Recognizes differences between hard and soft woods.

Applies flat paints and enamels neatly and evenly.

For pupils of fourteen and fifteen years hand skills are differentiated for the several kinds of laboratory or shop work in which the girls and boys are engaged — those involved in woodworking, in shoe building and shoe repair, in household mechanics, in auto greasing and washing, in sheet metal, in child care, in preparing food, in lunchroom training, in making clothes, and so on.

Attainments or concepts for science, social studies, and the related industrial arts are set up for the three chronological-age groups, 8 to 11, 11 to 13½ or 14, 13½ or 14 to 16, but are not differentiated as to I.Q. level, as the concepts, ideas, attitudes, and habits in these fields are of necessity recurrent, cumulative, and dependent on the child's individual background.

The mentally retarded child arrives at general concepts, ideas, and attitudes very slowly. Growth comes through many and varied experiences that put the child in touch again and again with the same facts and principles. Take, for instance, the concepts involved in understanding our dependence on other people in the matter of shelter. The child of eight, nine, or ten may visit a house in process of building; he may watch the different workmen, observe the different materials that go into the building, and note something about where they come from. He may help construct his own play-

house and live again in play much of what he has seen. At the ages of twelve and thirteen, when he visits a house in process of construction, he becomes aware of the variety of the workmen's jobs, the tools they use, the materials with which they are working. He may become interested in ways in which these materials are prepared and manufactured. He may visit the brickyard, the cement-block plant, the plumber's supply house. He comes to realize the numbers of workers who contribute to the building of the house and the numbers of sources from which materials come. At fourteen and fifteen years, when he comes to use power machinery in the wood-working shop, to experience assembling and finishing, to wire an electric door bell, or to put in a pane of glass, he may be directed to an increasing realization of man's labor in the providing of shelter. Through such recurring and ever enlarging experiences, his concepts and attitudes are built up. The teacher's purpose is to give to each child as broad and deep an understanding and appreciation of these concepts as possible. The more capable child will make more associations and see more of the relationships between products and workers than will the less capable child, but each will have some knowledge and some understanding of the different materials and labor involved in building.

The following excerpts are taken from the social studies attainments listed for the first age group.

#### SOCIAL STUDIES ATTAINMENTS

*Chronological Ages 8-0 to 10-11*

*Mental Ages 5, 6, 7*

Knows about his home, the kind of house he lives in, the number of rooms, their names, their use, the furniture, the kind of light, the kind of heat.

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Knows about the members of his family, something of what each does to help in the home, the housekeeping activities, the occupation of his father and mother.

Knows his neighborhood — other families living in homes like his, knows the stores and markets from which they get the things they need, the post office, the library, the firehouse, the church. Finds his way about readily.

Knows something about the work of the tradesman, the carpenter, the mason, the plumber, the tinsmith, the painter.

Knows something about a farm, the work of the farmer, the farm crops.

Knows about the different ways of traveling — the street car, the auto bus, the train, the airplane, the boat — how they go, who runs them, how they take care of people, what they carry, etc.

Knows something about such boys and girls living far away in other countries as the Eskimos, the Japanese, the Dutch. Knows about their homes, their dress, their food, their play.

In the field of science concepts, ideas, and attitudes are developed in the same way as in the social studies — through repeated observation and experience with natural and physical phenomena. The child of eight, nine, or ten may watch the trees bud, leaf, and blossom in the spring; he may gather many kinds of leaves, or chestnuts and acorns in the fall; and he may observe the bare trees in the wintertime. At the ages of twelve and thirteen he begins to realize the yearly cycle of tree and plant life; he may learn to recognize the common shade and fruit trees and realize that the lumber he is working with comes from a certain kind of tree with which he is familiar. At fourteen and fifteen there may be a growing familiarity with the common trees, their characteristics and their uses.

The following excerpts are taken from the general science attainments for the first age group.

## GENERAL SCIENCE ATTAINMENTS

*Chronological Ages 8-0 to 10-11**Mental Ages 5, 6, 7*

Associates a few characteristic conditions with special times of the year:

Thanksgiving — plants are ready for winter.

Christmas — days are cold and short.

Easter — the sun feels warmer, the snow has gone, plants begin to waken, robins have come.

Associates familiar seasonal characteristics, as colder weather, falling leaves, fewer birds; warmer days, soft wet ground, blossoms, birds, and insects.

Knows that plants need warmth, air, water, and sunlight.

Knows about food and habits of pets cared for at school and at home — rabbit, bird, guinea pig, dog, etc.

Knows about the common farm animals, their food, work, and habits.

A sufficient number of the attainments worked out in the Rochester study have perhaps been listed<sup>1</sup> here to indicate the way in which general statements may be interpreted in terms of specific attainments. The special-class teacher, in the absence of a curriculum, may set up such specific attainments for the children in her group by considering first their chronological ages, mental ages, and I.Q.'s. These facts will indicate generally their present learning ability, their rate of

<sup>1</sup> The attainments listed are not applicable to the least capable (I.Q.'s around 50) who will profit only from the simplest experiences, such as number as related to their needs in counting, in reading house numbers, in adding simple numbers and handling some of the most common measures, like cup, pint, quart, etc.; learning to express themselves plainly; and to write and read their names (see page 167). The attainments suitable to these children are learning to be clean, to do tasks neatly, and to be obedient. Various conditions will likely make many of these children better suited to the guiding and sheltering life of an institution than to adjustment in home or public school and community life. See Arnold Gesell, *The Retarded Child: How to Help Him* (Public School Publishing Company, Bloomington, Illinois; 1925), for a discussion of work for these low-grade children.



growth, and their social interests. Next she will consider the present abilities of the pupils in the tool subjects and in hand skills; and third, the kind of environments from which they come, their understanding of their environments, and their social needs.

She may then choose the general statements suggested in Chapter IX for the age groups with which she is working and develop each general statement in terms of specific attainments that would seem to have most value for her pupils in view of the conditions she has discovered. The outlines given in Chapter XIV of specific attainments suited to the various abilities of pupils in one group may suggest the development of a similar outline for other groups.

Any outline of attainments is tentative and will be subject to revision as subsequent experience shows what may be expected of the individual child and what will likely be of most value to him. But such a plan, outlined by the teacher or by groups of teachers and given a fair trial in the classroom, should inspire both teacher and pupil with more definite purposes, should insure more steady and continuous progress toward important educational goals, and should prepare the child to meet life situations in a more effective manner than would a program aimed at mastery of those attainments set up for normal children of the same mental age. The three factors that must be given most especial consideration in outlining such a plan are the final purpose of the attainments selected, continuity of pupil growth, and practical suitability of the various attainments to the child's all-round ability and life experience at succeeding ages.

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## QUESTIONS AND SUGGESTIONS FOR STUDY

1. If you were given a class of retarded children, ages 8 to 14 years, and were requested to adapt the grade curriculum to their needs, how would you proceed?
2. List the advantages of planning teaching in terms of a predetermined list of attainments; the disadvantages.
3. Select from the list on page 329 the references from which you would be likely to get most help in setting up attainments for a group of retarded children of 7 to 9 years. Make a list of such attainments.
4. Why do we know more about suitable attainments for the slow child in the tool subjects than in the so-called social studies or the sciences?
5. Devise a list of attainments for 13-, 14-, and 15-year-old boys in social studies; in science.
6. Make such lists for 13-, 14-, and 15-year-old girls.
7. What practical experiences that would work toward realization of the social-studies attainments listed in this chapter might a boy have in a shoe shop? in a sheet-metal shop?

## READING REFERENCES

- BURKE, AGNES, and others. *A Conduct Curriculum*. Charles Scribner's Sons, New York, 1923.
- Social Studies in the Public Schools of Ann Arbor, Michigan*, pages 23-26, 60-63. O. W. Haisley, Superintendent of Schools, Ann Arbor; 1929.
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## *Chapter Eleven*

### MEANS OF REACHING THE ATTAINMENTS

DESIRABLE knowledge, habits, skills, and attitudes for the mentally retarded child have been suggested in the previous chapters. How will they be realized? By means of what procedure, method, materials will they be reached? It is certain that these attainments cannot be realized unless they are inculcated in the child's acting, thinking, and feeling. They must become part of and be associated in his mind with real situations in his everyday home and school life. The attainments are utilitarian and social in their implications. They must be arrived at through experience. They must be acquired in situations that call for their use and that require their practice.

The philosophical and pedagogical principles set forth in Chapter III indicate the need for educational enterprises to be vital and closely related to life's needs. They may then serve as a core for motivating and integrating learnings. The need for activity and actuality in experience is also stated.

Progressive schools in the past decade have experimented with the selection and organization of curriculum materials into units of work, or centers of interest, that meet the above requirements. These schools have demonstrated that in contrast to subject-matter organization, which limits purposing and active participation on the child's part, the unit of work offers opportunities for lifelike activities in which the child feels the need to inquire, to make observations, to secure information, to try out things, to solve problems, and thereby attain many worth-while learnings. The units of work de-

veloped in the primary grades have been directly related to interests and activities in the child's environment and have broadened in the intermediate grades into units dealing with other peoples, other customs, the development of civilizations, inventions, and so on. The organization of the curriculum around such units of work brings into play varied activities related to many subjects.

The unit of work, because it offers opportunity for attaining, in real and lifelike situations, learnings that have meaning and direct applicability, is one means whereby slow-learning children can achieve the attainments appropriate to their stage of growth.<sup>1</sup>

A few illustrations of units of work, or centers of interest, that have been carried on in special classes will illustrate the values of this plan as a means of reaching the attainments desired for slow-learning children.

#### A POULTRY UNIT

The school was situated in an open section near the city limits. The chronological-age range of the class was from 9 years 8 months to 14 years 5 months.

One morning a visitor to the special class told the boys and girls of a school similarly situated in a Western city where a group of boys had developed a thriving poultry business — had built and planned their own chicken house, had borrowed money to stock it, and had been successful enough to be able to repay their borrowed money. The children became interested. Why

<sup>1</sup> Reference should be made here to the fact that special classes have for some time in reality used units for such practical enterprises as home-making and shop activities in place of the traditional academic subject matter that these children could not master. The development of the unit plan in progressive schools indicates, however, that such activities may be even more fully integrated in the curriculum than they have yet been.

couldn't they raise chickens in the school orchard? From this point forward their interest increased. The class visited a poultry farm within walking distance of the school for the purpose of finding out what they could about raising chickens. Half of the class studied the construction of the laying house, while the other half found out how to care for chickens. The next trip taken was to a poultry show held in the local Convention Hall, where the children enlisted the interest of the officials in their project.

The following are excerpts from the teacher's report on this unit.

The first real activity at the school was the planning and building of the laying house. This supplied the material for all of the arithmetic work for some time. Not only did the children have to draw plans, but they also had to measure up their lumber and then telephone several building wreckers until they could find the best lumber for the least money.

By the time our henhouse was finished, we were about twenty-seven dollars in debt. We then gave a movie for the school with the kodascope our class had bought the school a year or so before. We cleared twenty-five dollars.

When all was ready, we put fourteen pullets in our new laying house. A Poultry Club was then organized and officers were elected. The children attended to all the business of buying feed and selling eggs. The secretary and treasurer kept a book in which they entered the day's happenings, amounts expended, number of eggs sold, and so on.

We wrote many letters for information on equipment and on feeding and general care of poultry. We used the information from Cornell University both in building our laying house and feeding our flock. We subscribed for a poultry magazine which came every month. The children learned to care for the chickens and did so very scientifically.

Much of our supplementary reading was based on "dittoed" stories about this unit of study, such as "How We Built Our Henhouse," "Cornell Poultry Rations," and "Fresh Water Is Important."

What were some of the learnings or attainments suitable to the stage of growth of these children which came about through this interest?

Attitudes of observation, inquiry, and consideration were developed, also an understanding of some of the many sources for obtaining information, an appreciation of a club organization and the duties of officers and members, and an ability to read and to understand information. There were also many learnings in arithmetic — measurement, cost of lumber old and new, and values of returns on an investment.

Practice in making out bills, in making change, in keeping money accounts, could not have had the same value apart from this situation which demonstrated and involved actual needs for these activities. Lumber bills, feed bills, bills for eggs, paying out and taking in money, and keeping accurate records, were all real situations.

To quote again from the teacher's report:

Many children acquired a sense of reliability and dependability that they did not have before. . . . Now, a year later, four of the boys and one girl have a few chickens at home. There is great competition among them and interest runs high every morning when they tell how many eggs they got the day before.

#### A UNIT ON CEMENT

A class of boys eleven to thirteen years of age had experimented in making tea tiles from cement under a visiting art student. The boys enjoyed the mixing

process. They wanted to make cement blocks. When they began to consider the "how," they decided that first of all they would have to know more about cement and how blocks were made. With the aid of a city directory a cement-block factory was located and five



The poultry house and its proud proprietors.

of the boys who had telephone directories at home found the telephone number and reported it to the class. Arrangements were made for the visit. The boys returned from the visit with information about cement and better ideas of how to make blocks. The following excerpts are taken from the teacher's report.

After much discussing and planning as to how we could make cement blocks, we decided on a wooden form to be made and tried out.

After measuring lumber with yardstick and ruler, also studying comparative thickness of several pieces of stock, we selected the material. We set our planes and worked out a wooden form that could mold twenty-five blocks at one time. The boys have made about four hundred three-inch blocks. They learned the right consistency of sand and cement to make strong blocks and each day four different boys were chosen to manufacture blocks, season them, and pile them up.

We tried to get cinders to try out the cinder block, but found that no firm would deliver us a small quantity.

The boys decided to build a house from their manufactured blocks. They built a sturdy wooden platform for a base. They first set up blocks without cementing them together to get the proportions. Then the real work started. We tried five times to mortar or cement blocks together and each time the wet cement dried too fast or the dry blocks absorbed the moisture. The walls had to be taken down, the cement blocks scraped and cleaned to regular size, and again we tried to build. It happened at this time that some masons were working in the school building. A committee of two boys was appointed to ask one of the masons just what their proportions were for mixing the cement for a cellar. The boys learned that they were putting too much sand in the mixture and also that each block must be dampened before using so as not to be too absorbent for the wet cement mixture. With this in mind, they made a new mixture of mortar using one part of sand to eight parts of cement, dampening the blocks before use. This time they were successful! The boys learned that they had to act quickly before the mortar dried. While three boys were engaged in laying blocks alternately, other boys of the group planned and measured the size of windows and doors for the house. They made two door frames, two doors, four single windows, two triple windows, and one bay window.

Four boys planned to build from wood a model of a cement-block factory like the one they had visited. The



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machinery and the workmen were made of plasticine. The boy who assumed charge of this job was very particular about having measurements and all as accurate as possible. He did not accept any work from his assistants that did not come up to his standards.

At the beginning of our study, we read from a *Geography for Beginners*, by Edith P. Shepherd, pages 34 to 39, "Cement and Concrete." For supplementary reading, the four following books were taken by the boys from different libraries:

- CHAMBERLAIN, JAMES F. *How We Are Sheltered*, chapter on artificial stone. The Macmillan Company, New York, 1924.  
DAVISON, RALPH C. *Concrete Pottery and Garden Furniture*. Ralph C. Munn & Co., New York, 1910.  
HUSBAND, JOSEPH. *America at Work*, chapter on concrete. Houghton Mifflin Company, Boston; 1915.  
TARR, RALPH S., and McMURRY, FRANK M. *New Geographies: Second Book*. The Macmillan Company, New York; 1919.

Paragraphs were assigned to the boys of Group One and they agreed to report two important and interesting topics from their reading. . . .

The class was especially interested in reading stories that they helped plan and that were later made into real reading books by them. These stories were about their actual experiences and also contained descriptions of pictures they had found in magazines and used as illustrations for their books. Some of the stories were:

- "A Trip to a Cement Block Factory"
- "A Letter to Mr. S."
- "How We Made Cement Blocks"
- "A Story about Marl in Blocks"
- "A Trip to See a Freight Train"

The location of the factory very near the railroad brought to our attention the transportation of materials and the manufactured blocks. We took a trip to a New York Central Railroad siding near the school to observe and study types of freight cars. . . .

We traced the railroad and canal system in New York State. . . .

The class planned to make booklets of their written work on the unit as it was developing from day to day to be taken home to their families. . . . There were many illustrations in crayon and pencil. . . .

Measurement and the estimating of simple proportions were needed repeatedly in making the blocks, in building the house, in making booklets. The cost of materials and labor came frequently to our attention. . . .

Incentive for improvement in writing and spelling came through writing letters and preparing work for their booklets.

It happened that Joe's father was repairing his cellar steps and walk and Joe helped him to mix the cement in right proportions as well as to lay and spread the cement.

About a week after the unit was completed, one of the boys brought a clipping from the newspaper, "Builder's Supply Firm Has Large Plant for Manufacture of Blocks and Pressed Brick." With great satisfaction he showed the teacher that this firm was none other than the one the class had visited. The entire group were delighted to hear an account of a firm with which they were acquainted.

The excerpts from the teacher's report indicate how the interest in making cement blocks grew and led to many other experiences — planning and carrying out trips to factory and to railroad, reading about cement, writing co-operative stories, making books, illustrating, building a house, building a replica of the factory, working out oral and written problems in measurement, writing letters. In the carrying out of these experiences many worth-while learnings took place. The teacher's complete report lists among these accomplishments in English, in reading, number, spelling, hand skills, and social studies. Some of the specific attainments listed by her were :

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Ability to use new words in stating information.

Ability to read, and the habit of noting titles and authors of books.

Ability to measure independently to one-half inch and to one-fourth inch.

Ability to solve one- and two-step problems on amounts and costs of materials.



A nursery corner fitted up by a class of adolescent girls, ages thirteen to sixteen years.

Realization that a workman must know many things to carry out his job.

Group co-operation on trips.

### UNIT ON CHILD CARE

A unit on child care developed in a class of girls of from thirteen to sixteen years through interest created in the home economics class. The study and prepara-

tion of the proper food for babies and young children in this class stimulated interest in other phases of baby care. This interest appeared in the special-class room and was developed in discussion.

First of all the baby's needs for clothing, furniture, and various other things were discussed. Two trips were planned with the class — a trip to see a model baby's room in the practice house of a near-by school, and a second trip to a department for babies in one of the city's department stores. As an outcome of these trips a model baby's room was fitted up and a baby's layette was made.

Many experiences grew out of these undertakings — finding information on child care from Health Bureau bulletins; formulating into simple statements for a child-care book the information found on cleanliness, rest, fresh air, time schedules, clinic service, and first-aid rules in illness; reading about child life of other times and in other countries (*The Puritan Twins*, *The Japanese Twins*, by Lucy Fitch Perkins); planning diets, clothes, and time schedules for babies and growing children in the girls' families; learning children's poems and lullabies; enjoying pictures of children by Jessie Willcox Smith; bringing in a real baby to weigh, to bathe, and to dress; observing a two-year-old at play; planning a tea and inviting guests to see the results of their work.

This study gave increased purpose to reading, English, and number study. It lent importance, understanding, and interest to the care of young children — a duty required of many of the girls in their homes. It gave the girls who did not have this responsibility their first opportunity to carry out in actuality some of the problems of child care and home life.

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In carrying out these experiences the girls showed definite development of the following learnings:

Growth in hearing and reading vocabulary.

Ability to read stories with understanding and enjoyment.



These girls prepared and served tea on the day of the formal exhibition of the nursery their group had fitted up.

Ability to state information gained.

Ability to estimate amounts and costs of food and clothing.

Ability to make baby's clothes.

Ability to launder cotton and woollen baby garments.

Attitude of helpfulness in child-care problems in their own home.

A greater awareness of the value of clinic service.

An appreciation of how a baby's room can be fitted up simply and attractively with little expense.

Poise in meeting guests.

The illustrations cited here may be sufficient to indicate ways in which a unit may be used with slow-learning pupils to focus their attention and purpose on real and meaningful situations and thereby bring about learnings that are directly applicable to everyday needs.

SPECIAL VALUES TO THE MENTALLY RETARDED  
OF UNITS OF WORK

The accounts in current literature of units of work developed with normal and superior children emphasize children's multiplicity of interests, their ability to initiate, to plan, to question, to find pertinent information, to weigh values, to solve problems, and to create. Emphasis is placed on the contributions of the children in the selection and planning of experiences as the unit progresses. These abilities are marks of intelligence. The mentally retarded will show only the simplest indications of these abilities. But many of them will question, will make suggestions, will try things, if the situation in which they are placed is within their understanding. There is, moreover, sufficient evidence to indicate that, with intelligent guidance, the majority of slow-learning pupils may develop a whole-hearted interest in undertaking a problem and that through this interest they may be led to question, to consider possibilities, and to carry out a plan. Teacher guidance in directing experience is, however, of paramount importance with the mentally retarded. Many of their experiences will develop as the result of the teacher's suggestion, but purpose and interest may nevertheless be present and the children may realize great profit.

This fact may be illustrated from the development of the unit on child care. The idea of making a child-care book came as the result of teacher suggestion, but the idea appealed to the girls and as a result they developed

attractive books that they were pleased to use later for reference. The teacher made the suggestion for a tea and guided the planning of it, but it became the girls' enterprise and was carried out by them in every detail.

In general the value of a unit of work for the mentally retarded lies in the opportunities it offers to them for vital and significant learning. In various specific ways the unit of work is fitted to function to this end :

1. It brings real purpose into much of the child's work and play.
2. It enables him to experience things first-hand — to have sensory experiences, contacts with realities.
3. It gives meaning and interest to the commonplace in his environment.
4. It enables him to plan, execute, and judge in a simple way at the level of his stage of maturity.
5. It teaches him how to do things and how to conduct himself in actual situations so that behavior is integrated.

The development of the unit on cement may be used to illustrate these five points. Through it greater purpose was given to reading, to discussion, to writing, to measurement. The boy working in the unit experienced realities. At the factory he saw different kinds of materials in quantities, he saw machines and processes; when he made his own blocks, he handled materials. He gained increased understanding and interest in the ways cement and concrete products are made, their costs, their uses, transportation of them, and the need for a workman to plan his work. The boy gathered information to help him in planning and carrying out his ideas. Actual results showed whether or not his plan was sound. The use of the directory,

consulting workmen about their methods, measuring materials, making blocks, cementing them, securing books on cement from different libraries, making books and writing a letter of appreciation to the factory owner, are instances of some of the things he attempted to do in real situations and learned proper ways of doing. His learnings were part of a total behavior situation. Provision for units that will produce such experiences promises vital returns in the education of the slow-learning.

*Utilization of daily and occasional incidents.* Units are one means whereby desirable educational attainments may be realized with the slow-learning group. But in regularly recurring or occasional incidents in the daily life of the children there are also many opportunities to further progress toward these attainments. Such incidents, which could be developed by the teacher as valuable learning situations, are too often taken care of or passed by unnoticed. Such situations as the following illustrate this fact:

The children take the attendance. They report on the number of boys and girls present and post the numbers with the total on the bulletin board or attendance card. The fourteen- and fifteen-year-olds keep the daily attendance record and compute the average daily attendance.

An invitation comes from another class. The children read it and plan what the reply will be.

A set of new reference books is sent to the school. They are brought to the special-class room and examined — the binding, the illustrations, the print. There is a discussion of how to open a new book and how to take care of books. Treatment of some well-known topics is searched for to indi-



cate the use to which these books can be put. When information on these topics is desired, the new books will be consulted.

A new baby arrives in one of the children's families. The children are interested in its birthday, its name, and how much it weighs. The information is entered in the "class diary" or in "The Morning News."

The height and weight survey offers opportunity for comparing measurements; for keeping a record of diet, rest, and exercise; for watching the effect of these on weight and noting any improvement in the record.

Springtime finds the schoolyard cluttered with paper and the soft ground overrun by careless children. The class cleans up and posts signs. The class visits some of the home yards to observe how the children have cleaned them up.

John has no place in his room where he can keep his clothes properly. A packing box is located and the teacher and boys help John develop a plan for converting it into a clothes chest.

The teacher of a first grade asked the special-class teacher if book bags could be made for the children. A committee of girls visited the first grade to find out the number of bags needed, where and how they would be used, etc.

It is evident that such situations offer endless and invaluable opportunities for developing attitudes, knowledge, and skills in various subjects. Such happenings in the children's daily life may furnish stimulation for a unit of work. There is always plenty of such material at hand for the teacher to seize on. One day several bees flew in at an open window in a primary class. The

tendency of the children was to be frightened. The teacher used the incident to stimulate an interest in bees, in discovering the spots in the neighborhood that the bees frequented, and in learning how they make honey.

A boys' class gathered some cocoons. The hatching of a beautiful *Cecropia* led to the discovery in the science reader that the *Cecropia* was a cousin to the silk moth that is raised in Japan. Threads of the cocoon were examined under the microscope and the boys were ready for a study of the silk industry in Japan.

Through such situations, new learnings come to take place in instances that might otherwise have been unnoticed or noticed only very casually.

#### PROVISION FOR INDUSTRIAL ARTS

Experience in industrial arts, including handwork, plays a large part in the education of the mentally retarded since much of their learning must come through manual experience. Possible and desirable attainments in industrial arts techniques and hand skills have been suggested in Chapter X. For this part of her work the special-class teacher needs training and experience that will give her a varied background in a wide range of activities and techniques.<sup>1</sup> Brief reference only can be made here to the purposes and means of utilizing industrial arts experiences in the daily program.

In the past much of the handwork in the schools was planned simply as training to develop motor ability, to give satisfaction in accomplishment, and to produce skills and habits for industry and practical life. Today industrial arts serve also as a means of expression — of interpreting and giving form to ideas; of solving

<sup>1</sup> See references on pages 331-333.

problems; of vitalizing and motivating interest in other content and subjects; and of developing understanding of the changes made by man in raw materials to facilitate their use; and of the interdependence and co-operation of workers.

Units of study may be developed to provide opportunities for handwork that serves many of these ends. Illustrations of such purposeful types of handwork may be taken from the three units outlined in this chapter. There took place the building of a poultry house, the making of cement blocks, building a house, making a layette, preparing and serving refreshments for a tea, and making record books. As pupils grow older, units centered in shop activities and homemaking provide further opportunities for handwork that will contribute to effective learning about raw materials and the relation among workers.

There is also a type of handwork that may be unrelated to a unit but will grow out of the practical or æsthetic needs in the environment. Illustrations of this type of activity have been previously described — cleaning up lawns, making a clothes chest, and making book bags. One can readily recognize the values to be derived from handwork growing out of such a practical or æsthetic need in contrast to a program calling for a construction of models.

Techniques and standards of workmanship in the industrial arts may and should be maintained although the work is done for a real need rather than as a manual exercise. As the child carries out his purpose, he should learn what tools and materials to use and how to use them. He should be led to appreciate sound standards of workmanship and to develop a feeling of self-respect in a piece of work well done. A plan of attainments such as those outlined in Chapter X may be a guide to

such growth and development of the child as he carries out his purpose. Definite planning of industrial arts experiences with definite goals in view is necessary if satisfactory attainments are to be realized in this field. Such a plan may be studied by the pupil as well as the teacher — in industrial arts as in other subjects. He thus learns that there is a definite plan of progress in his handwork just as there is in his reading.

#### PRACTICE IN THE TOOL SUBJECTS

Experiences growing out of a unit of work or out of daily and occasional happenings will rarely, if ever, furnish adequate opportunity to develop mastery of essential attainments in all subjects, especially in the tool subjects. Such experiences will show the child the need for learning to read, to write plainly, to speak clearly, to count accurately. But there must be additional provision for practice in these skills if any satisfactory degree of mastery is to be attained.

Sufficient reading material developed for use in units of study graded to the ability of the normal child is not available, much less for the mentally retarded, although it is usually possible to find some material related to the subject of the study. Pupils and teacher usually work out co-operatively stories that may be used for reading practice, but such stories do not provide sufficient practice. Frequent reading periods with scientifically constructed materials are necessary if the child is to learn new words and to develop proper reading habits and skills. Until sufficient reading material suited to the slow child is available, the teacher will have to resort to the discriminating use of good basal readers designed for the average child.<sup>1</sup>

<sup>1</sup> See references listed on pages 369–370.

The majority of units offer more opportunity for English expression than for practice in any other tool subject. They all suggest interesting topics to talk and write about. Time must, however, be given to the teaching of specific habits and skills in English. Mastery of a correct form of speech may require a period given over to this purpose. Ability to make a request clearly may call for some such special practice as the dramatization of several incidents requiring this ability. Spelling of important words will require definite periods of instruction.

Certain number facts and number processes must be learned and practiced if the child is to have facility in using number to solve problems. Experiences in the unit show the need of and give purpose to number work, but additional instruction and practice is necessary for the development of number abilities.

Hand in hand with the experiences of the unit, therefore, must go the teaching and learning of certain important skills in the tool subjects. It seems hardly necessary to add that practice planned to this end must be given real meaning for the child. It must not be directed toward the mastery of facts or skills that will not be of immediate and significant use to the child.

#### SUMMARY

The educational attainments toward which the special-class program should work should be reached through a variety of learning situations. Carefully planned units of study may provide worth-while experiences for the pupil. Regularly recurring or occasional happenings in his daily life may be developed as learning situations. There must be thoughtful provision for much activity in the industrial arts. Specific instruction and practice in the tool subjects must be given.

QUESTIONS AND SUGGESTIONS FOR STUDY

1. Read any three of the references listed on pages 329-331. Which one seems to you most helpful in its interpretation of the purpose of the center of interest, or unit? Why? List terms that are used most frequently in discussion of units — for example, “purpose,” “meaningful,” “activity,” “enterprise.” What is the significance of each?
2. State in your own way the meaning of the terms “unit,” “experience,” “attainment,” as they have been used in this chapter.
3. Outline one of the units described in this chapter. Consider especially initial motivation for the undertaking; experiences that developed; resulting attainments.
4. List eight attainments other than those mentioned in the text that you think may have resulted from two of the three units described.
5. Discuss some of the experiences in the unit on child care that may have helped give the girls the increased social poise that was evident when they received their guests at tea.
6. Discuss how a unit on cement might develop with normal boys of eleven and twelve years of age. What interests might be an outgrowth of their reading? of their discussion? What experiences and learnings might result? Contrast the abilities of the normal and the mentally retarded as they might affect the development of such a unit.
7. (a) A unit wisely chosen and guided gives purpose to handwork. Illustrate.  
(b) Handwork is sometimes little more than mere “doing” without purpose. Illustrate.  
(c) Refer to the references on industrial arts, pages 331 to 333. Select ten of the titles which suggest the purposive use of handwork.  
(d) Write out six illustrations of ways in which each unit listed below may have made the handwork that developed from it meaningful:

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AGES	UNIT	HANDWORK
8 to 12	Keeping Our Clothes Clean	Building a laundry. Making soap.
8 to 12	Fairy Stories	Building a stage to give plays, making a stage background, curtaining, making costumes.
12 to 15	Our Clothing (A unit for boys)	Copying a model of a spinning wheel. Making a class ironing board and a shoeshine stand to use in keeping clothes and shoes in good condition.

8. Does the development of the unit on child care outlined in this chapter illustrate each of the five ways in which a unit may be valuable to the mentally retarded? Develop your answer fully.
9. List ten possible daily or occasional happenings in the lives of your pupils that might be developed as learning situations. Make suggestions for their utilization as learning situations according to the following plan:

SITUATION	HOW TO USE IT	
	<i>Ages 8 to 13</i>	<i>Ages 13 to 16</i>
Eye care requires attention to proper lighting.	Deciding where and at what time of day the light is best. Observing light on different days. Deciding when shades should be drawn and electric lights put on. Finding the best position for close eye work. Listing rules to follow. Reporting on light in homes — rooms with the best light, poorest light.	Using a candle meter if possible to measure light in room. Making room plans to show lighting, exposures, methods of lighting on different kinds of days. Studying ill effects of poor lighting. Inviting other classes to hear findings of study. Taking over responsibility, through a committee, for caring for light in room.

10. The experiences in a unit may be made an incentive for mastering the tool subjects. Discuss and illustrate this statement.

### READING REFERENCES

See list of reading references at end of Chapter XV, pages 329–333.

## *Chapter Twelve*

### THE CHOICE AND PLANNING OF UNITS

THE preceding chapter indicated how a unit of work may provide a focus for the attention and purpose of mentally retarded children and lead them to valuable experiences and desirable attainments. But if these units are to function to their fullest effectiveness, they must be carefully chosen and carried out.

#### CRITERIA OF EFFECTIVE UNITS OF WORK

In the preceding chapter the values of the unit to the mentally retarded child were discussed — the opportunities it provides for increased purposing in work and play, for contact with first-hand experiences, for attaining better understanding of the commonplace in the environment, for planning and executing and learning in real situations. If any or all of these values are to accrue, units must be carefully selected on the basis of well-chosen criteria.

The criteria that may be applied to the choice of units are embodied in the principles developed in Chapter III, which summarizes the principles underlying the education of the mentally retarded child. Here it was developed that education must be suited to life's interests and needs, to the child's mental, physical, and social development, and to individual and group growth; it must provide for development of personality, for practical mastery of the tool subjects, for a wide variety of activity and experience, and must carry over to life outside of school. These requirements the unit of work must fulfill.



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*The unit of work should grow out of real-life situations.* A unit of work should be closely related to the child's life and appeal to his interests. Life is teeming with activity in which children are interested. Much of the young child's play is in imitation of what he sees and hears around him. If the unit of work is centered about some activity that comes normally into the life of the mentally retarded child and provides him with opportunity to carry out his own ideas in relation to it, there is sure to be interest. The unit on poultry already described illustrates this point. It developed from an activity that the children had observed in their out-of-school experiences and that was directly related to the home life of some of them. Opportunity was given to consider and plan in relation to it. Interest ran high. The unit on child care was also developed from a common experience and a normal interest in the life of adolescent girls. The development of units of work from such near-at-hand situations has particular value for the slow-learning group, who are inclined to learn incidentally much less from their environment than does the normal child.

*The unit should be suited to the child's social, physical, and mental level of development.* It goes without saying that the choice of a unit depends on the child's previous experiences and his present abilities. Children with very meager home backgrounds, for example, require more equipment and the repetition of more observations and experiences in order to learn than do children with better home opportunities; units planned for such children would not cover so wide a field of interests as would those for children with average or above-average home backgrounds. Units for the young mentally retarded child, who tends to be interested only in the immediate and the "doing" side of an experience, must provide

for learning through observation, construction, imitation, and play. They must also provide opportunity for self-expression in terms of common experiences and familiar elements in the environment. Such activities should be developed as making a house, housekeeping, building a post office, playing post office, making a street car, playing conductor, passenger, and motorman.

The adolescent will profit most from units that provide opportunity to carry out activities common in home and community life. Such activities relating to the life of the home might be developed as food preparation, the making and care of personal or family clothing, the use of household appliances, heating and ventilating the home, repairs in the home. Activities related to vocational interests that might be valuable are service in the school cafeteria, shoe rebuilding, the making of furniture, tool making, and automobile repair. Directly related to or, preferably, developing from these activities with which the slow child may readily identify his own interests and problems, there must be others that will help him to appreciate man's development of raw materials and the co-operative efforts of society in the production and distribution of goods. Every teacher must know her group very thoroughly if she is to choose units suited to their needs and abilities.

*The unit should further both individual and group growth.* The unit should be so planned that the group as a whole can develop through it in qualities of participation, co-operation, and consideration. It must also be planned so that all the children can profit from it individually. Each child should make some gains. This criterion is particularly significant for an ungraded class because of the diverse abilities that may be represented among the pupils. At times the work of a class

may be so arranged that only one group profits from it, while for the remaining groups the work is too easy or too difficult. When pre-adolescents and adolescents are members of one class, a unit should be chosen for them in which both can participate at their respective levels. Take as an illustration a unit on transportation. As a part of the unit, the older pupils might assemble pictures and make models to show transportation at different periods. They might work out a history of transportation. They might find information and stories to read to the younger children. The pre-adolescents might assemble pictures of different kinds of transportation today and make a model of each kind. The adolescents may assist the younger children at this work. The units described in Chapter XIV suggest experiences suited to different age groups and abilities within a group.

*The unit should provide for the development of desirable habits and attitudes of conduct as well as for the acquisition of appropriate knowledge and skills.* Every unit of work should offer plenty of opportunity for the practice of habits of such qualities as self-control, thrift, orderliness, perseverance, cheerfulness, courtesy, and unselfishness. Such opportunity may be provided in situations where the child learns to wait for the use of a tool, to economize on material, to put materials in place, to stick to a task until completed, or to help another pupil. Needless to say, it is of great importance that the unit provides the motivation to acquire knowledge and skills and offers opportunity for this acquisition.

*The unit should be so developed that interests, skills, habits, and attitudes fostered by it carry over into life outside of school.* Is what the child learns useful to him in his home and his community as well as in his school life? The unit on child care would rank high on this criterion.

There is developed in it an interest in the younger members of the family, an attitude of helpfulness, skill in making clothing and in preparing food, knowledge about food, rest, and clinic service. All these may play a part in out-of-school life. Certain experiences that involve learnings of much practical value for the child in his out-of-school life may be provided in many units. Such experiences as using the library, reading for information, reading signs, finding the cost of what is used, taking care of playthings and materials and using tools may well be provided in numbers of units in which the child will participate.

*The unit should provide for the practical use of the tool subjects.* Through the unit a real meaning may be given to the mastery of tool techniques. The experiences of the unit should be so directed that the tool subjects will frequently be called into use. The units on poultry, cement, and child care described in the preceding chapter indicated the need for reading, English, writing, computation, and measurement. Even the mentally retarded soon learn, if wisely directed, that reading is one way of finding out about things, that one must know how to measure accurately to get satisfactory results, and that it is desirable to spell correctly when writing a letter. To encourage such appreciation of the value of skills the child should constantly be guided to see such relations as those between ability to find the cost of materials and ability to add and multiply, between writing an invitation and learning to spell, between going on an errand and learning to read street signs.

*The unit should give opportunity for many kinds of experiences.* A single unit may call for as wide a variety of activities as excursions, the use of different mediums for construction and illustration, reading, the keeping of

records or accounts, the writing of letters, figuring, and measuring. It may be noted that such variety was a feature of the three units described in the preceding chapter. The experiences in the school subjects or in creative handwork cannot be so many or so varied as they would be in units for normal children, but they may provide for as much variety in the use of mediums and hand skills.

#### SELECTING THE UNIT

The value of any unit may be determined by the degree to which it measures up to all these criteria. There is need for the teacher not only to choose units on the basis of valid criteria but also to apply these criteria as the unit progresses and again at its completion. She must continually challenge every unit of work in the light of these standards. Such a policy thoughtfully followed over a period of years would encourage real power in choosing and developing units of work.

It is assumed that before the teacher settles on a unit of work she knows as thoroughly as possible the children in her class, their ages, their mental development, their school and home histories. If the class is new to the teacher but has worked together before, their former teacher should pass on a report of their interests and past undertakings with possible suggestions for new units. If the group is newly organized, the teacher may have to discover the interests and capacities of the children. She will know in a general way what appeals to mentally retarded children of the ages of her group and the experiences they are capable of participating in. She may then place materials at their disposal for construction and illustration, show them pictures that may call out interests, take them for a walk and lead them to discuss what they see, watching all the time to

learn what appeals to them and what seems to offer the greatest opportunity for learnings.

When the teacher knows her group thoroughly, she will review carefully the attainments that the children are in need of developing — attainments in conduct, in personality, in the tool subjects, in health, in the social studies, and in science. This review will remind her of the goals for which the group should work. She will then decide on a problem that seems to be suited to the interests and abilities of her group and to offer opportunity for progress toward important goals. There will be several important steps that she must then take in preliminary planning of the unit. She must (1) consider the many different experiences that may grow out of the problem she has selected; (2) list the possible questions that the children may raise in connection with these experiences; (3) list the further experiences the children may undertake in attempting to find answers to their questions; (4) note where English, reading, writing, and arithmetic may be needed; what hand skills may be involved; what meanings, concepts, attitudes, may be developed; check those attainments from her first list that the unit will be likely to give practice in; note what work supplementary to the unit may be required to realize attainments.<sup>1</sup> The teacher will be likely to find that units centering around the social studies and vocations will furnish the experiences essential to the carrying out of her plans. The fields of health and science will also contribute valuable subject matter for unit activities.

The individual teacher should work out a method of planning and analyzing units of work that is most practical and usable for her. The outline below is that used by Rochester teachers in planning the units of

<sup>1</sup> See page 268.

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work reported in the following chapters. It suggests one method of procedure.

### TITLE OF UNIT

*(State numbers in class, chronological ages, mental ages.)*

1. The setting: the interest and how it developed.
2. Possible attainments determined in view of pupils' abilities and their needs to strengthen previous attainments and to develop new ones.
3. Possible problems or questions that may develop.
4. Experiences that may answer these questions.
5. Experiences that may be needed to supplement the unit.
6. Books and other instructional materials that may be useful.

Note the recurrent use of the terms "possible" and "may." Preliminary plans for units of work are tentative and suggestive. They do not state the exact order or development of work. The initial plan is only a statement of possibilities; actual developments will be determined by the interests and needs of the group as they appear during progress of the unit.

### THREE TYPES OF EXPERIENCE TO BE PROVIDED FOR IN UNITS

Successful teaching and successful learning are dependent on "child-experience." The teacher's job is to guide the child so that this experience is worth while.<sup>1</sup> For convenience in discussing the planning and carrying out of a unit of work, it may be helpful to consider the experiences involved as of three types — the first-hand experience, the second-hand experience, and the

<sup>1</sup> The term "experience" is used here to denote all situations in which the child enters. It covers the sum total of any series of stimuli and responses that the child lives through in a day.

experience of expression. In the actual classroom situation these are all interrelated and work together, but they are differentiated here to help the teacher analyze by what means the children are learning under her guidance.

These three types of experience will enter into any unit that is carefully chosen, planned, and carried out. The teacher, therefore, will find it helpful to consider to what degree she is making use of each of these three types of experiences in the classroom units of work.

Through the *first-hand experience* the child has contact with real things. For example, he handles seeds, runs different kinds of soil through his fingers, waters the seeds, and watches the resulting growth in different soils. He watches a fish swim and observes the dilation of his gills. He visits the firehouse, the railway station, the docks, and the factory. These experiences are first-hand. They have come to the child through actual observation and handling of real things, not through pictures, reports, or reading. As stated previously, such direct contact with actuality is an absolute necessity for the slow child who usually lacks that power of sensory imagery or association that makes explanations about unknown and unexperienced things intelligible. First-hand experiences are not always possible, but wherever they are possible, it is the teacher's responsibility to plan for them. Only from many first-hand experiences are built up the meanings, concepts, and ideas out of which the child can understand those experiences that can come to him only second-hand.

Through *second-hand experience* the child sees a model, a picture, or some other representation of some object, or he hears or reads about it. Instead of actually watching a real fish, he sees a picture of one and the teacher or some other person tells him how it swims and



breathes. All children cannot see mountains, but they have seen rocks, trees, and hills and realize their height. This background of first-hand experiences can be utilized to help the child conceive the towering mountain that comes to him only as a second-hand experience.

The third type of experience may be called the *experience of expression*. If the child is getting many impressions from first- and second-hand experiences, he will want outlets for expression. The desire for self-expression is a natural one, and under teacher guidance an increasing number of opportunities for such experiences may be created. Expression wisely guided is a means for encouraging any child to check with first-hand experience to verify, clarify, and enlarge his concepts and ideas. Through the experience of expression, the child also gets some of what has been described as first-hand experience. For example, he learns the suppleness of the wood in his kite sticks, the strength of the nail, the durability of clay when it is fired, and so on. Through the experience of expression the normal child learns much. Through expression he clarifies his ideas. In illustration and in construction he makes the thing as he sees it and understands it. As he works he is likely to express his ideas also in words. In play and dramatization, he imitates and represents toys, persons, or situations. Such learnings may also accrue to the slow-learning child where his experience of expression is wisely directed.

#### PROVISION FOR FIRST-HAND EXPERIENCES

In the development of a unit the teacher should provide as many first-hand experiences as possible. It is amazing how much interesting and valuable reality the teacher may bring into the classroom. The children,

given encouragement, will also make valuable contributions. A collection may soon be assembled of natural life — insects, fish, plants, twigs — of articles from different countries, and of articles made from different products and for different purposes. Whatever the subject of the unit, it is easily possible to have in the classroom much of the actual material that will give it meaning. The teacher in a community in which there is a museum that will furnish exhibits to schools will be able to get much such valuable material for use in her classroom.

Excursions and trips out of the classroom provide an extremely important source of first-hand experiences. Germany's appreciation of the value of such educational excursions for school children may set an example to the rest of the world in this respect. Wherever one goes in Germany on the street, on the elevated railroads, or at railway stations, one comes upon groups of children out to see and hear under the teacher's guidance. The tendency to develop this type of learning experience is becoming more and more apparent in America.

For children of twelve or under there are many neighborhood trips that may lend enrichment and understanding to any unit of work. Older children may also profit from short trips. A walk of two miles to some interesting spot proves none too much for them, however, if they are really concerned to find out about something. Although Rochester furnishes some bus service for class excursions, by far the greater number of such trips are taken on foot. The variety and extent of the trips taken by special classes in this city<sup>1</sup> indicate how feasible this type of experience is for teachers who value it. Attention is called to the frequent library and

<sup>1</sup> See page 229.

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museum trips taken by all grade groups as a means of establishing interests and habits that may influence the use of free time.<sup>1</sup>

It seems hardly necessary to state that class trips should be carefully planned, carried out, and followed up by the teacher and the class. A brief outline of steps in these activities may suggest to the teacher a method of procedure.

1. Planning: deciding on place to visit, direction, route, purpose.
2. Carrying out: plans for controlling conduct, making observations, asking questions, taking notes.
3. Following up: discussion, reports, co-operative or original stories, letters, a simple outline, questions to ask and to answer, reading, illustration, construction, a second trip.

Ways of following up the trips should be varied from one time to another. If the trip has been at all worth while, the children will want to talk about it, but they will not always want to write a story or a letter. The following excerpts from teachers' reports on "trip values" indicate among other things that different methods were used for follow-up.

The following statements made by teachers suggest the values recognized by them as developing from class excursions :

<sup>1</sup> Previous to the curtailment of public library service in 1932, the children's librarian of the Rochester Public Library co-operated with the schools in a library program for special classes. Each class had one period of instruction a term at the library, related to whatever unit of study was under way. Each class could also have as many "browsing" periods at the library under the direction of the class teacher as desired. The children's librarian co-operated in locating materials, etc. The library plan was progressive, so that by the time the child left school he might have developed definite habits of using the library.

Our class is made up of twenty boys ranging in age from 11 years 10 months to 14 years. Excursions were planned to occur about once a week during the progress of our unit on Rochester. The work of the week usually developed in relation to the purpose of the trip and the information and impressions gleaned from it. The boys enjoyed the trips and considered them a real privilege. I explained that it was not a holiday but that the Board of Education gave us the privilege of holding our class at the firehouse, for example, in order that we might learn at first-hand about our community.

We aimed to go to the library once a month, and Miss H. and I planned ahead for stories, pictures, and so forth. Three of the boys became regular borrowers at the library.

I usually made some check on the trip. Very often on the bus trips each boy had a piece of tagboard and pencil with which he wrote in order the streets through which he went and returned. From that data he would make a map at school next day. Occasionally he wrote the names of the things he saw that he would like to know more about. Then we looked these up in Compton's Encyclopedia. He found very interesting pictures. I simplified the description and told them a few facts about it. Sometimes I gave them yes-no tests and once I sent papers back to the librarian (following a library visit at which Miss H. had told them about Early Rochester.) She was pleased and surprised that they did so well.

They wrote a letter to Mrs. P. at the museum to thank her for her hospitality, and still another to Mr. C. after a visit to the W. S. School, telling him which shop they liked best and why. I think the check on the trip is most important but needs to be varied from time to time.

The excursions encouraged better conduct, too. We frequently heard of someone who had seen us on our trip, and the boys came to feel that conduct in public places was very important.

I was quite surprised to note how much the parents

approved of the excursions. I found my principal, too, became more interested in the work we were doing.

We gave up a plan to go to the museum at the new university because it seemed too far to walk and we could not get the bus. The boys were disappointed. One of the boys went by himself and returned with an interesting account for the class.

The boys and the parents consider the trips a part of the work because they realize to some extent how much profit has been derived from them.

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Our class is made up of nineteen girls ranging in age from thirteen to sixteen years. Without doubt the trips were of great value to my girls. They offered definite and concrete material for study. One trip offered an incentive for others, and they afforded new channels for recreation. The trips to the museum stimulated visits to the library to gain more information. After our first trip to the museum many girls wanted to visit the art gallery. This later trip took real planning because it was made after school hours and many of the girls had to rearrange their home duties. In some cases the girls and parents later made visits to the museum and the art gallery. These trips, too, increased the power of observation. Several times before the experience one heard remarks like this, "That place? I have been there a lot of times," or, "What can you see there?" but before our return the same girl might comment, "Why, I never saw that before." I felt that as a result I knew my girls better. Several of the retiring and dull-appearing girls asked questions or gave information about something particularly interesting to them.

After our trip to the Home Bureau exhibit, the girls realized that other people besides the teacher appreciated work done by hand. This same realization was apparent in their reactions to handwork at the museum. Many of them previously had belittled handwork, partly perhaps because of the attitude of their families.

A REPORT OF TRIPS TAKEN IN ONE FALL TERM BY  
SPECIAL CLASSES IN ROCHESTERPRIMARY AND INTERMEDIATE  
CLASSES*For nature observation and Units  
on Home and Neighborhood*

	NUMBER OF TRIPS
Art gallery . . . . .	2
Bakery . . . . .	2
Blacksmith shop . . . . .	1
Book departments of two stores	1
Dairy . . . . .	1
Department store (general visit)	1
Dry-cleaning company . . . .	1
Eastman School of Music . . .	1
Election booth . . . . .	1
Farm . . . . .	6
Firehouse . . . . .	3
Florist shop . . . . .	1
Grocery store (neighborhood) .	4
Hardware store . . . . .	1
House construction . . . . .	2
Laundry . . . . .	1
Library . . . . .	7
Lumberyard . . . . .	1
Museum . . . . .	10
Neighborhood (traffic, street signs, directions, nature study, etc.) . . . . .	96
Parks . . . . .	8
Pet shop . . . . .	4
Playground . . . . .	1
Poultry show . . . . .	1
Private homes (pupils') . . .	6
Public market . . . . .	2
Seed store . . . . .	1
School buildings and grounds .	15
Toyland (toy department of store) . . . . .	3
Zoo . . . . .	1

## PREVOCATIONAL CLASSES

*For nature observation and  
Units on Foods*

	NUMBER OF TRIPS
Better Homes exhibit . . . .	1
Farms	
General . . . . .	4
Produce . . . . .	1
Dairy . . . . .	4
Farm implement company . .	2
Food companies (wholesale, storage, and packing com- panies) . . . . .	30
Food stores (retail, neighbor- hood) . . . . .	29
Library . . . . .	17
Museum . . . . .	20
New York Central Railroad .	4
Public market . . . . .	15
Federal clothing exhibit . . .	1
Parks (nature study) . . . .	5
University campus (nature) .	3
Stefansson lecture . . . . .	1

Some of the values to be derived from trips may be briefly summarized as follows:

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1. They enable the child to learn about his environment under direct teacher guidance. The teacher interprets to the child significant elements of his environment that would otherwise pass unnoticed by him.
2. They stimulate the child to observe and to question.
3. They stimulate and give meaning to activity of many kinds in the classroom — discussing, making things, writing, reading, illustrating, and so on.
4. They are entered upon with enthusiasm and keenly enjoyed by the children.
5. They develop attitudes and habits conducive to wise use of free time — habits and attitudes in relation to the use of libraries, museums, parks, observation of nature, etc.

TABLE XIV

NUMBER OF TRIPS TAKEN BY ROCHESTER SPECIAL CLASSES IN ONE YEAR

CLASSES	TERM	NUMBER OF CLASSES	NUMBER OF TRIPS		
			Walked	Went in Bus	Total
Primary and intermediate	Spring	21	154	20	174
	Fall	22	169	16	185
Prevocational . . . .	Spring	19	104	48	152
	Fall	19	94	43	137

Considerable space has been given to the excursion as a first-hand experience because of its important place in the education of the slow-learning child. Ample opportunity must be given every child for this or some other properly directed first-hand experience. For there is no way of learning that is as effective as first-hand experiences under teacher guidance.

#### PROVISION FOR SECOND-HAND EXPERIENCES

Pictures in great quantities are invaluable aids for the slow child. They reinforce and build up many of the facts and concepts that the child has got at first-hand. Every teacher should be constantly enlarging her picture collection. Illustrated reference books, encyclopedias, stereoscopes, and the daylight lantern are almost indispensable aids in the special class. The moving picture is even more valuable than the still picture, but all schools are not yet equipped for its use.

The teacher should familiarize herself with the wealth of visual materials that are available for her use, and with the descriptive matter that accompanies slides and films.<sup>1</sup> Careful selection of visual materials and the use of explanatory and descriptive matter will go far toward building up clear concepts and meanings in the minds of pupils. Any unit of work will offer abundant opportunities for the use of such materials.

#### PROVISION FOR EXPERIENCES OF EXPRESSION

When children are encouraged to relive their interests and ideas, experiences of expression naturally develop. Such experiences take the place of much of the routine handwork that formerly found a place in the curriculum.<sup>2</sup> As the child attempts to express his ideas with various media and tools, he learns to observe detail accurately and he finds out how things are made, from what they are made, and how they work.

Any unit offers rich opportunity for graphic art and construction activity. Expression is encouraged by

<sup>1</sup> See references on pages 331 to 333.

<sup>2</sup> See discussion of industrial arts on pages 209 to 211.



having ample materials at hand, many of which can be furnished by the children — paint, crayon, paper, cardboard, clay, plasticine, wood, boxes, cloth, spools, and so on — and simple tools with which to work. Adolescent boys and girls will require in addition housekeeping and shop equipment of various kinds.

#### THE SCHOOL ENVIRONMENT

In the development of units of work, which must always depend to a great degree for their effectiveness on the pupil's whole-hearted participation and his attitudes of satisfaction and self-confidence, it is extremely important that the schoolroom environment must provide motivating interests and be inspiring to wholesome emotions and attitudes.

Current educational literature gives many pictures of classrooms designed to these ends. There is also to be found occasional illustration of a formal classroom that has been adapted for informal work.<sup>1</sup> From study of these, ideas may be gained for creating a stimulating classroom environment.

The features most important for the special-class room are movable furniture, as much clear floor as possible for activity, plenty of cupboard space for class supplies and the work of individuals, plenty of blackboard and bulletin board space, and tables for displaying articles and work. The equipment and materials for activities will depend on the ages and number of the children. The schoolroom should reflect a pleasant, homelike atmosphere free from any suggestion of restraint, with evidences of the children's interests and work but without cluttering or overloading.

Special-class activities should not be limited to the classroom, but the special class, as an integral part of

<sup>1</sup> See references 32 and 33 listed on page 330.

the school, should have access to any general school facilities that are available — the gymnasium, the music room, the art room, the swimming pool, the auditorium, the library, the home economics laboratory, the science room.<sup>1</sup> Every school facility should be available to the mentally retarded child to bring him satisfying and enriching experience.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. State the six criteria suggested for judging units for the mentally retarded. Would you add any others? Discuss your opinions fully.
2. Choose one of the units described in Chapter XI and apply the six criteria to it.
3. State the three criteria that you consider the most important. Defend your choice.
4. Discuss the following question: Is there any difference between criteria to be applied to units for normal children and to units for mentally retarded?
5. Discuss the opinion that the choice of a unit and the preliminary analysis of the possibilities in it are as important as the method of its development with the children.
6. Discuss the value of each of the steps in the teacher's analysis of the possibilities in a unit outlined on page 222.
7. Suppose that you are assigned to teach a special class of children twelve to fifteen years of age. Outline a plan of specific things that you might do to become acquainted with the group.
8. List all the "first-hand" experiences that your neighborhood environment offers to your class.
9. List ten second-hand experiences that a teacher of a special class may give children but which they might better have had first-hand.

<sup>1</sup> If the program of the special-subject teacher does not provide for work with special-class groups, the special-class teacher can usually arrange to take care of her class in these rooms in periods when they are not in use by other classes.

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10. One teacher of a primary special class listed the following places for visits within walking distance of her school :

Neighborhood park	A church
Greenhouse	Busy street corner
Child's home yard (garden)	Railway bridge
University campus	Railroad grade crossing
Art gallery	Grocery
Firehouse	Market
Branch post office	A drugstore
Branch library	A gas station
Dental dispensary	Department store
A theater	Apartment under construction

- (a) Plan a unit of work in which the first three trips might prove valuable.
  - (b) Select four other trips and suggest how each might serve as a stimulus for a unit.
  - (c) Select trips feasible for almost any class.
11. Discuss and illustrate the following statement by application to the development of a unit of work with a special-class group: "There is no such thing as knowledge unrelated to experience. One may hear about other people's experiences, but unless one has something of one's own to relate this information to and test it by, it cannot have meaning and is of little value to the individual. The child must acquire knowledge by means of his own experience."
12. Read references 32 to 34 listed on pages 330-331.
- (a) Plan an ideal special-class room for children of eight to twelve years.
  - (b) Outline a plan for improving your own classroom environment (1) if you were unable to requisition any new equipment and could have only ten dollars' worth of material; (2) if you could requisition fifty dollars' worth of any materials you wanted.

### READING REFERENCES

See list of reading references at end of Chapter XV, page 329.

## *Chapter Thirteen*

### PROCEDURE IN CARRYING OUT THE UNIT

WHEN the teacher has chosen a unit, analyzed its possibilities for her particular class, and made a tentative plan for its development, the next step is the stimulation of a live, active interest. How may the unit be started to secure maximum purpose from the children?

#### THE DEVELOPMENT OF THE UNIT

The teacher may stimulate enthusiasm and purpose for any unit through reading, pictures, excursions, suggestions, or any other means likely to promote interest and to create purpose on the part of the children. At the outset of the unit on cement the boys asked to make cement blocks. The teacher increased this interest by placing on the reading table some books from a commercial cement company, by encouraging the children to talk about the pictures they found in them, to tell what they knew about cement, and to consider how they could make blocks in their classroom.

The teacher's attitude and her manner of teaching are a large part in the success of any unit. The teacher must be a helper and a leader, not a dictator. She must help the child to solve a problem that is a real one to him. To illustrate again from the unit on cement: The boys wanted to make cement blocks. The teacher then led them to see that they must have certain information about making blocks before they proceeded. She did not dictate a method. She only

guided the group in choosing what they would do. She talked over matters with them to the end that plans and choices might have a real purpose. She helped her pupils to do things they had decided would help them to solve their problem. They found a cement factory near enough for them to visit, arranged a visit to it, visited a railroad siding to learn about the handling of freight, and got from the library books that would help them. The teacher who is accustomed to making plans for her children and directing activities in every detail may very easily fall into the error of attempting to dictate the experiences in a unit. But where there is such teacher dictation, there is very little child purposing.

The unit on poultry furnishes another example of how a teacher guided mentally retarded children in planning a unit but allowed opportunity for effective child purposing. The problem of building a poultry house and raising chickens required a background of information and a consideration of plans. The teacher saw to it that stimulation for thinking and planning should grow out of experience. She posted on the bulletin board the announcement of a local poultry show and pictures of prize poultry. She brought in some poultry magazines and inquired of the children if they had any magazines to contribute. She immediately followed up the children's suggestion to visit a neighboring farmer who raised chickens. Out of the discussion that came from examining the materials they had collected and from visiting with the farmer grew the formulation of plans to get information on such specific problems as the kind and number of chickens to be housed, the location for the poultry house, its size, and the amount and kind of materials needed.

In making plans for a unit, emphasis must be placed on its tentative nature. As the unit progresses, the teacher changes, drops items out of, or adds to her tentative plan in order that the children's interests and needs may be served to the utmost. In the teacher's preliminary plan for the unit on cement, the trip to the railway and the study of freight were not listed; they were a natural outgrowth of the trip to the cement factory.

Any one of a number of activities carried on in the development of a unit involves skills and content from several subjects. The work of any one period, for instance, may call into use English, reading, and social studies; the work of another period may involve discussion, number, and hand skills. When children are engaged in real-life situations, such as reading to get information or planning to build an object, they are bound to feel a need for the school subjects as they serve the problem under way. To illustrate again from the unit on cement: As the boys discussed the different kinds of freight cars and listed each on the blackboard with descriptive sentences, English, reading, and social studies were all three in evidence. The teacher who would develop units of work with her classes must realize that in many situations subject divisions cannot be drawn; but she notes how subjects may be used, and guides and directs the work of the group to make opportunity for their use. The situations developed in the unit may provide subject matter for teaching the tool subjects. In the unit on cement, for example, the children made original number problems about the situation that had developed. The teacher also made problems for the children to solve. The children listed new words for which they wanted to learn meanings; and they listed

words that they needed to learn to spell. They wrote original sentences or stories using these words. The best of these were chosen for their record books, which were taken home by the pupils at the end of the unit.

The successful development of a unit depends on guidance to bring about needed experiences. This means that the teacher challenges and weighs the values of what is happening at every step of the way.

Is it advisable for more than one unit to be under way in a class at the same time? Mentally retarded children on the whole tend to profit most from a program that provides for related experiences developed around one interest at a time. It is therefore generally better for these children at both the younger and older levels to have only one unit in progress at a time. But occasionally the older children may be capable of carrying on what might be called a "sub-unit."<sup>1</sup> A boys' class that took charge of the "shoe shop" and were developing a unit on leather took over also the problem of taking care of the school banking. They felt the need of some little study in connection with this project, so a bank was visited, a teller's cage was made, and the boys began to care for the money. An extensive study of banking was not undertaken, however. A group of normal or superior children might have developed in detail a study of banking and carried it along with their other unit on leather, but it is not generally wise for slow-learning pupils to attempt to carry on two units in this way.

#### EXPERIENCES UNRELATED TO THE UNIT

There will undoubtedly always be going on in a class work that is unrelated to the unit or that must be

<sup>1</sup> See the outline on page 312 for an example of the development of a sub-unit.

thought of as only supplementary to it. The need for periods devoted to the development of important specific habits, attitudes, and skills has already been noted.<sup>1</sup> There is also the continued need for inculcating hygienic practices and for providing opportunity for games and rhythm and for the development of enjoyment of music and stories. There will also be activities evolving from the need to utilize incidental happenings in the life of the class. There may also be handwork, home economics, or shop work going on that has developed from real needs that are not a part of the unit. John's mother may need an ironing board; a girls' class may be asked to make curtains for the kindergarten or may be planning and serving meals for teachers' luncheons. There are usually nature observations also being carried on — of the weather; the arrival of the early birds; the growth of bulbs, seeds, plants; and other features of the natural environment. The teacher must therefore make provisions for necessary supplementary activities when she plans a unit. The unit will not comprise all the activities of the pupils' day or develop without interruption.

#### THE TEACHER'S RECORD OF THE UNIT

The teacher, when the unit begins, has before her her tentative plan. As the work progresses, she keeps a running record. She notes how interest was developed, how problems or questions were stated, and how activities were first planned to answer the problems. Then as the unit proceeds, she notes what is taking place and how one experience leads to another. She notes each experience and the attainments re-

<sup>1</sup> See pages 211-212.



sulting from it. She notes accomplishments or attainments for the class, for different groups, for individuals. She keeps in mind the development of personality habits and attitudes as well as subject-matter attainments. She checks progress with her tentative plan. At the end of each day she inventories the day's work and considers the program for the following day.

At the end of the unit it is helpful for the teacher to make a summary covering the high spots in its development and listing experiences, attainments, or specific outcomes under subject-matter headings. This record and summary is not only a valuable account of the children's development, but it enables the teacher to decide what type of unit should follow. It indicates to her what educational purposes were furthered by the unit and those for which provision should be made in subsequent units. Record-keeping consumes time and energy, but it is decidedly worth while.

As the teacher gains experience in the making of records, this task will become less arduous. But she must in the beginning give careful thought to the forms and methods she will use. These the teacher should be free to arrange for herself.

Following are, in review, suggestions of some of the important items that the teacher's record of a unit should include:<sup>1</sup>

1. How the unit began. Significant developments.
2. Experiences or activities listed under subject groupings.
3. The attainments or outcomes in terms of school subjects. Outcomes in personality and social habits and attitudes.

<sup>1</sup>For actual example of teacher's records see pages 269-280, 289-297, 305-313.

4. Materials and references.
5. Supplementary experiences and the resulting attainments in terms of health, school subjects, etc.

#### THE CHILDREN'S SHARE IN RECORD-KEEPING

Some of the record-keeping in connection with a unit may be carried on with the children's help. A very good plan for keeping daily records is to make a chart<sup>1</sup> that can be ruled off in columns — one for each day — heading the chart "Our Daily Record." Children and teacher decide what shall be entered at the completion of each day's work. Another plan is to make such a chart but give it a more specific heading — "What We Are Learning about Child Care," for example. Subject headings can then be listed on the chart — reading, English, number, foods, etc. Information and attainments will then be listed under subjects and date.

Each child should develop the habit of helping to make and to keep records that show improvement in conduct and in mastery of the school subjects. He thereby gains a new interest in and understanding of his progress and that of the class. A unit of work offers many opportunities for this kind of record-keeping. The character of each unit and the special needs of each class situation will determine the form of the records to be used. The records on pages 242 and 243 are illustrative of ones that may be developed with children at various age levels. These might, of course, be varied from group to group, and from unit to unit. The ones here suggested were developed as wall charts that were kept posted in the schoolroom.

<sup>1</sup>Wrapping paper may be used. If heavy tagboard is used, with mounted corners to hold the caption and name cards, and colored pins to record achievement, the same board may serve many times.

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### I PUT AWAY MY WORK WITH CARE

NAME	M	T	W	Th	F	TOTAL	M	T	W	Th	F	TOTAL	M	T	W	Th	F	TOTAL
John																		
Mary																		

### WHAT I AM TRYING FOR IN ENGLISH

	WEEK ENDING					
	March 5	March 12	March 19	March 26	April 2	April 9
To speak plainly and audibly						
To answer questions completely, not by just a word or two						
To tell something interesting						
To be a good listener						
To avoid interrupting						

### I KEEP CLEAN



FACE



HANDS










TEETH



CLOTHES

	JOHN	MARY	SUE	FRED	JANE	SAM

I PUT AWAY

	JOHN	MARY	SUE	FRED	JANE	SAM
 PAPER						
 SCISSORS						
 PASTE						
 PAINTS						
 BRUSH						
 HAMMER						
 SAW						

Each time work is put away, the child makes a check after his name in such a chart as that at the top of page 242. Any habit, of course, may be indicated in the heading — "I Came to School on Time," "I Hung My Wraps Carefully," "I Cleaned My Teeth This Morning," "I Put My Scraps in the Basket." More than one such chart might be in operation at one time.

One chart may cover several specific daily habits on one general subject. Pictures or silhouettes and

titles may help the child keep these various habits distinctly in mind. Spacing may allow for two or four blocks to a name under each heading, each block big enough to allow room for five marks, representing a week's record. The chart may then show progress over a period of several weeks.

As children get older and develop ability to observe and record in greater detail, they may develop a wide variety of records. These may be kept on wall charts or in individual or class booklets.

Definite standards of attainment must be settled on for such records. Certain specific accomplishments may be recorded by a check, or degrees of success may be recorded by symbols indicating various levels of achievement.

If it is desired to keep a record to show for the whole class such facts as those suggested in the second chart on page 242, the spaces for records may be made large enough so that the initials of those who have practiced the attainments with some success may be entered in them.

Arithmetic, written English attainments, and reading skills that allow for testing may be listed in the same manner with the children's names entered in place of weekly dates. Attainments may be indicated by checks or by blocks of color. Dates should always be entered in some way.

Bar graphs on squared paper to show progress on daily work or weekly tests may also be used.

Children also enjoy keeping charts of such facts as are suggested by the following titles of records actually kept by classes :

New Words We Have Learned  
The Stories We Have Read  
The Songs We Can Sing

The Games We Like to Play  
The Community Trips We Have Taken  
The Maps We Have Made  
The Current Events We Have Discussed  
Contributions to Our Science Collection

Such records define for both child and teacher the work of the class and give to it significance and purpose. They are a guide to the teacher in her development of a unit. From such records the child learns pride in accomplishment, which is as satisfying as and of much greater educational value than the pleasure he may derive from artificial rewards or from records that place emphasis only on competition with other pupils.

#### TESTS OF OUTCOMES

The teacher will readily appreciate the value of tests that may serve as an aid in measuring progress toward the realization of those attainments she had set up in her preliminary plan for the unit. Both informal and standardized tests may be used for this purpose. Definite suggestions for selecting such tests are given on pages 346-347, 354, 356-358, and 362-363.

At the close of a unit it is a good plan to have some kind of informal check-up on what has been accomplished. The best kind of test for this purpose is one that attempts to appraise not only mastery of information but also children's attitudes and their ability to use what has been learned. Such tests are hard to devise for classroom use. The most commonly used are lists of questions to be read by the pupil and answered by him in writing. A child's answer in this kind of test may show that he knows what is the right thing to do in a given situation, but it does not necessarily indicate that he will act that way in that situation.

For instance, children may be asked to check the well-balanced meals on a list of dinner menus submitted to them. That they choose the correct items in such a test is no indication that they will choose or plan in actual practice menus like those they have checked. All this test shows is that the child is aware of the character of a balanced meal. We may hope that his actions will be directed by the knowledge, but we have no evidence to indicate that they are or ever will be. Probably a better way to test the child's attainments in regard to eating habits would be to observe him in situations requiring the choice of foods under controlled conditions and to record his choices. Any records of teachers' observations of children's behavior are of course not entirely reliable, either; but since no way has yet been found for the teacher to test behavior objectively in actual situations, we must rest our decisions regarding pupil attainments on teacher observation and on the results of paper-and-pencil tests.<sup>1</sup> There is need for experimentation to develop objective tests that will measure habits and attitudes.

Some forms of tests that lend themselves to determining results from a unit of work are the yes-no tests and the completion, matching, multiple-choice, and direction tests. Following are excerpts from tests of these various types: <sup>2</sup>

<sup>1</sup> Where children cannot read sufficiently well to follow a paper-and-pencil test, an oral test may be used. For a test in foods given to boys of ages 12-3 to 14-5 (I Q's of 53 to 75) the teacher divided her class into three groups that were tested in different ways. Group I read and answered in writing; to Group II the teacher read the test questions orally and the boys wrote the answers; in Group III the teacher read the questions to each boy, the boy responded orally, and the teacher recorded the responses.

<sup>2</sup> For tests of progress in the tool subjects see pages 346-350, 354, 356-358, 362-363.

## OUR CITY

(For Pupils Aged 13 to 15 Years)

- I. Draw a line under the word that makes the statement true :
1. Rochester leads the world in the manufacture of (auto-mobiles, kodaks, bicycles, airplanes).
  2. To reach the Lehigh Valley Depot, take a car marked (South Avenue, Jefferson, Park, North Street).
  3. The New York Central Depot is located on (North Street, Elm Street, Court Street, Central Avenue).
  4. The Genesee River flows into (Lake Erie, Black Creek, Lake Ontario, Atlantic Ocean).
- II. Place after each word in Column I the number that stands for the answer you choose from Column II.

### COLUMN I

Lincoln Alliance  
Cobbs Hill  
Sagamore  
Subway  
Aqueduct

### COLUMN II

1. Park  
2. Route for trolley under ground  
3. Route of canal across the river  
4. Bank  
5. Hotel

---

## WHAT HAVE WE LEARNED ABOUT CLOTHING?

(For Boys Aged 11 to 14 Years)

- I. The samples of cloth on the table are numbered. Write after their numbers in the following list the kind of cloth — silk, cotton, wool, linen — that each is.
- |      |      |      |       |
|------|------|------|-------|
| 1. — | 4. — | 7. — | 10. — |
| 2. — | 5. — | 8. — |       |
| 3. — | 6. — | 9. — |       |
- II. Finish each of the following sentences with one of these words : wool, cotton, silk, linen, leather.
1. The best handkerchiefs are made of \_\_\_\_.
  2. Most men's suits are made of \_\_\_\_.
  3. Knitted caps for winter wear are made of \_\_\_\_.
  4. Our shoes are made of \_\_\_\_.
  5. Sails for boats are made of \_\_\_\_.
  6. Boys' shirts are made of \_\_\_\_.



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III. Write *yes* or *no* after each of the following questions :

1. Do people in warm countries wear more clothing than people in cold countries? \_\_\_\_
2. Did people long ago weave cloth at home? \_\_\_\_
3. Is most of the cotton in the United States grown in the North? \_\_\_\_
4. Should woolen clothes be properly aired before they are put away for the summer? \_\_\_\_
5. Do clothes wear longer if they are kept clean? \_\_\_\_

### WHAT HAVE WE LEARNED ABOUT FOODS?

(For Girls Aged 13 to 16 Years)

I. Place a G after each well-balanced menu :

- |                           |                    |
|---------------------------|--------------------|
| 1. Scalloped potatoes     | 2. Creamed chicken |
| Rolls and butter          | Baked potato       |
| Boiled rice and marmalade | Carrots            |
| Bananas                   | Fruit salad        |
|                           | Milk               |

II. Write the number 1 after each name of a food that gives strength for work and play.

Write the number 2 after each name of a food that builds and repairs the body.

Write the number 3 after each name of a food that regulates elimination.

You may write two numbers after one food.

- |             |             |                   |
|-------------|-------------|-------------------|
| Eggs        | White bread | Lettuce           |
| Potatoes    | Bacon       | Cabbage           |
| Green beans | Milk        | Whole-wheat bread |
| Carrots     | Fresh fruit | Green vegetables  |

III. Tell what trip you have enjoyed most this term.

Tell three things you learned from that trip.

- |    |    |    |
|----|----|----|
| 1. | 2. | 3. |
|----|----|----|

IV. Answer the following questions on the map of the United States.

1. At top, bottom, and sides of the map write in their proper places the words north, east, south, and west.
2. Locate and name four of the following cities :

Rochester	New York	San Francisco
Buffalo	Chicago	Minneapolis

3. Label four of the following states:

Florida	California	Minnesota
Texas	New York	Ohio
4. Locate, by writing the name of the food on the map, regions that any four of the following foods come from:

Wheat	Pork	Oranges
Corn	Beef	Salmon

#### THE DAILY PROGRAM

It is important that the school day be arranged so as to distribute activities wisely and give over to each a proper amount of time. The daily and weekly schedule should provide for periods of time sufficiently long to allow experiences to develop naturally and to continue so long as interest and need warrant. Short five- and ten-minute periods for activities are not advisable for any child, much less for the mentally retarded child who takes longer to orient himself in any situation than does the normal child.

Just as the plan for the unit must be tentative, likewise the plan for the daily program should be somewhat tentative. The teacher should be free to vary the program as the need arises. The percentage of time of any day spent on any one activity may need to be adjusted to fit individual needs. She should keep in mind, however, that special-class children need a certain amount of regularity, perhaps more than normal children. There are also certain activities that must come at regular stated times on the program: periods for mid-morning lunch; periods for the use of special rooms like the gymnasium, library, home economics laboratory; periods in which a special-subject teacher comes into the classroom. Besides there should also be stated times for discussing and planning work; for the development of reading, number, and English; and for hand activities. It is

advisable to keep the periods for the development of the tool subjects as regular as possible. If the need for change arises, the children should understand why their schedule is changed. Consideration must be given to the fact that special-class children and their parents are often sensitive to any situation that appears to omit the tool subjects. They respect these as essential elements of an educational program, and want training in them. It may not be out of place here to suggest that because of this attitude toward the tool subjects, children should be frequently led to see the many ways in which they are learning reading, English, and number through the experiences of the units they develop.

The ideal program will allow for informal get-together periods where children and teacher can be on intimate terms, exchange experiences, and talk over their work together. One of these periods at the beginning of the day will provide time for the teacher and children to discuss what has already been accomplished in the unit, what the next steps in it should be, and what the definite plans for the morning's work are. Mentally retarded children cannot be expected to assist in planning the daily schedule. What will be undertaken and when it will be done must be planned by the teacher. Discussion periods should, however, be provided to acquaint the children with the work to be done and to create purpose in carrying it out. Frequently there should be get-together periods at the close of the day when work is judged, accomplishments are summed up, and children rate themselves on results. The ideal program should always allow time for the children to be made aware of work to be done, to consider when and how they will do it, and to determine the progress they have made in it.

## *Procedure in Carrying Out the Unit*    251

### APPROXIMATE ALLOTMENT OF MINUTES PER WEEK AND PERCENTAGE OF TOTAL SCHOOL TIME TO BE SPENT BY SPECIAL CLASSES ON ACTIVITIES PROMOTING ACHIEVE- MENT IN THE VARIOUS SUBJECTS

#### *Pre-Adolescent Groups — Age Range 7 to 12 or 13*

	MINUTES	PER CENT TOTAL SCHOOL TIME <sup>1</sup>
Reading, including literature <sup>2</sup> . . .	250	15.8
English — oral and written, including spelling and writing <sup>2</sup> . . . . .	325	20.6
Arithmetic . . . . .	200	12.7
Health, including physical activities <sup>2</sup>	250	15.8
Music . . . . .	100	6.3
Social studies and general science <sup>2</sup> .	150	9.5
Arts and crafts . . . . .	300	19.0

#### *Adolescent Groups — Age Range 13 to 16*

	MINUTES	PER CENT TOTAL SCHOOL TIME <sup>3</sup>
Reading, including literature <sup>2</sup> . . .	220	13.3
English — oral and written, includ- ing spelling and writing <sup>2</sup> . . . .	200	12.1
Arithmetic . . . . .	120	7.2
Health, including physical activities <sup>2</sup>	180	10.9
Music . . . . .	90	5.4
Social studies and general science <sup>2</sup> .	150	9.9
Hand skills and related arts		
General arts and crafts . . . . .	120	7.2
Home economics, shop, <sup>2</sup> and voca- tional guidance . . . . .	570	30.4

<sup>1</sup> Total school week was 1575 minutes.

<sup>2</sup> Activities designed to furnish practice in reading and English may center about the subject matter of health, social studies, science, home economics, or shop. Time devoted to these subjects may then be increased.

<sup>3</sup> Total school week was 1650 minutes.

# WEEKLY PROGRAM FOR BOYS' CLASSES

(Chronological ages 13½ or 14 to 16 years)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9 : 00- 9 : 15	Taking attendance, health inspection, hygiene, planning for day's work. Reporting on school and class events (by president and secretary or chairman). Calling attention of class to current events, new material on bulletin board, etc.				
9 : 15- 9 : 50	Period for increasing concepts, vocabulary, expression. Discussion, current events, individual reports on topics from unit, etc. Study of pictures (daylight lantern, Kodascope). Interpreting diagrams, models, graphs, etc. Planning a letter, articles for school paper, etc. Developing science experiments.	Club activities : Scout, boat, airplane, bow and arrow, metal craft, harmonica, photography, Glee Club, Audubon Club, etc.; and trips.			Group discussion continued.
9 : 50- 10 : 00	Lunch period and relaxation.				Lunch period.
10 : 00- 10 : 30	Groups I and II meet with teacher on alternate days for arithmetic development and practice work. Groups I and II work on alternate days on arithmetic assignments, including plan for individual mastery of skills.				Arithmetic.
					Trips every second week.

10 : 30- 11 : 10	Hygiene, games, physical activity.	<p>For Group I or II. Reading and English development lesson with teacher on alternate days—to improve mechanics of reading, increase reading vocabulary, familiarity with books, and skill in written English.</p> <p>For Group I or II. Independent study period on alternate days—silent reading with definite purpose, investigation of topics, preparation for oral report to class, drawing of diagrams, maps, illustrations, etc., writing letters, copying vocabulary words, etc. Individual practice in improving writing. Spelling study.</p>		
11 : 10- 11 : 30	Spelling: dictation and testing for week's assignment	Reading and English as above, or summary period for checking on accomplishment, needs, etc.	Music.	Spelling review.
11 : 30- 12 : 00	Lunch period			
12 : 00- 2 : 30	Shop activities.		12 : 00-2 : 00. Shop activities. 2 : 00-2 : 30 Hygiene, Music games, or rhythm.	12 : 00-1 : 30. Shop activities 1 : 30-2 : 00. Music 2 : 00-2 : 30. Library
2 : 30- 3 : 30 (after school hours)	Directed athletic activities. Team practice. Competitive sports.			

# WEEKLY PROGRAM FOR SPECIAL CLASSES

(Chronological ages 8 to 12 or 13 years)

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9 : 00- 9 : 35	Reporting attendance, health inspection, and songs Reporting date, weather, temperature Reporting observations and interesting things that have happened outside of school. Planning the day's work.				
9 : 35- 9 : 45	Morning lunch.				
9 : 45- 10 : 15	For Group I, II, or III For Group I, II, or III		Arithmetic Arithmetic. Development and practice with teacher. Activity in building blocks, working at numbers, drawing, and so forth		
10 : 15- 11 15-	Reading modeling, making illustrations, and so forth		Development lessons Reading independently, carrying out reading exercises, and so forth		
11 15- 11 : 45	Dramatization.		Stories	Music.	School assembly.
1 : 15- 2 : 00	English. Planning and discussing matters for unit to write and to spell words				
2 : 00- 2 : 30	Games.	Rhythm	Games and free play.		
2 : 30- 3 : 30	Construction and expression related to unit or individual interests.				Foods labora- tory.

An approximate allocation of minutes per week to various types of activity is suggested on page 251. This schedule is intended chiefly to suggest proportions of time that might well be given to different subjects in special classes. They would be modified for any particular group. The greatest difference between the time schedules of the grades and those of the special classes lies in the fact that in the special classes larger proportions of time are given to health, hand skills, and related arts. Proportionately longer time is also given in the special class to reading and English and shorter time to number; but even with a time schedule providing for such proportioning of time there is a strong tendency on the teacher's part to give too much time to number — and to abstract number at that — with the special-class group. English and reading are needed more frequently than number by the majority of this group throughout life. The time schedule shown also indicates that the proportion of time devoted to hand skills and related arts is greater for adolescents than for the younger children.

Weekly programs also are presented here to indicate how the time in special classes may be planned for two age groups — the pre-adolescents, from eight through twelve years of age; and the adolescents, from thirteen through fifteen years of age — in school systems where the children from these classes are given access to all the special facilities of the school system. The programs are sufficiently detailed to indicate the kind, continuity, and variety of activities that may arise during one period as a unit progresses.

In small communities where slow-learning pre-adolescents and adolescents must be grouped together, the weekly program will be dependent on the personnel of the group and the facilities available for their use.



The teacher may use as a basis for planning her program such an outline as the one given here for pre-adolescents, increasing for her older pupils the proportion of time given to handwork.

#### ORGANIZATION OF WORKING GROUPS

The class as a whole will work together in many of the activities of the unit. But the variety of mental levels and levels of accomplishment in the tool subjects certain to be found within any one class makes it advisable to divide the children into groups for at least part of their work. The programs outlined here, it will be noted, provide for such groupings. The pupils in a special class in a city community with a three- to five-year age range usually fall into three ability groupings in the tool subjects. The class in the small community where the age range is wider may require more groupings.

The teacher may group her pupils on the basis of their abilities for the tool subjects, and then plan group work designed to promote the attainments all may achieve, keeping in mind individual needs within the groups. Or she may be able to plan the work on a wholly individual basis. In health, science, and social studies the pupils may pursue a common interest, each participating and benefiting according to his individual ability.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Discuss some of the values that should accrue from a unit started off with enthusiasm.
2. Why must a good unit plan always be tentative?
3. Discuss the values of a number lesson based on activities in a unit as compared with one based on a page of unrelated problems in the arithmetic book.

4. The following was typical of the teacher's procedure in a so-called "unit" on Japan: "Children, we will make a sand table about Japan. We will use this paper for the sea. John, you may paint this paper blue. We will make Fujiyama here." The principal disapproved of this procedure. Why do you think he might have disapproved?
5. Discuss and illustrate, "The successful development of a unit depends on guidance to bring about worthwhile experiences. It means that the teacher challenges and weighs the values of what is happening at every step of the way."
6. Make a plan for keeping a report of a unit as it develops in a classroom.
7. Contrast current educational literature containing unit reports written by teachers with educational literature of a decade ago on the subject of methods.
8. Discuss a plan that allows for each child in the group to keep a record of his improvement (*a*) in spelling, (*b*) in number.
9. Sometimes a teacher wishes to encourage a group to utilize their time between bells in a profitable way. Devise a chart that might be helpful in such a situation. Suggest the ages of the group for whom it is planned.
10. Draw up a suitable weekly program for a class made up of adolescents and pre-adolescents, using as a basis the program outlined for a boys' class, pages 252-253.
11. Modify the program suggested on pages 252-253 for a boys' class so that it may be used for a class of adolescent girls.
12. What advantages does a weekly program have over a daily program?
13. Give three instances from your experience of changing the daily program as the need arises.

#### READING REFERENCES

See list of reading references on pages 329 to 333, following Chapter XV.

## *Chapter Fourteen*

### DETAILED DESCRIPTIONS OF UNITS

THE units reported in this chapter will serve to illustrate many of the principles developed in the previous chapters.<sup>1</sup> The reports given here show, among other things, (1) the development of units chosen on the basis of the criteria suggested in this text; (2) the teacher's analysis of the possibilities in the unit and her preliminary plans for its development; (3) the utilization of the three types of experience — first-hand, second-hand, and experience of expression; (4) the teacher's report of how the unit began, of the high spots in its development, and of experiences and attainments involved in it analyzed in terms of the school subjects; and (5) the teacher's statement of experiences supplementary to those of the unit.

The descriptions in this chapter indicate how units or centers of interest in special classes may grow very naturally out of the children's interest in the experiences they are meeting in the round of everyday life. They illustrate the fact that the subject of a unit does not need to be imposed on children or to be extraneous to their everyday experience. When the school is providing wholesome, purposeful experiences, there will be inherent in them many a stimulus to a unit. The important thing is for the teacher to allow the children freedom to experience, and to develop the interests growing out of their experience. They must be free to desire and to express their desires.

<sup>1</sup> The reports of these units are very detailed, as they were prepared as part of a curriculum study to illustrate the possibilities that there are in unit development.

## A UNIT CENTERING ABOUT MUSIC

The first unit reported here was developed in a primary group of children from 8 years 6 months to 11 years 8 months chronologically, with mental ages of from approximately six to eight years. These children, the majority of them Italians, were listening with great pleasure to the broadcasting of a series of concerts given by the Rochester Civic Orchestra.<sup>1</sup> Pupils in the fourth grade and above were given the opportunity to hear these in school. The pupils of this group loved music, and they were fortunate in having a teacher who shared this feeling. Attentive listening to the concerts and later discussion of what had been heard led to expression in the class of rhythm in dancing, to spontaneous fashioning of musical instruments in plasticine and paper, and to graphic interpretation of favorite selections. Following their radio experience, the children were allowed freedom to give expression to what they had heard and felt. The teacher saw in this expression an interest that would serve as a drive toward many worth-while learnings. She planned and executed accordingly.

The teacher's first step was to make a tentative plan of the possibilities in the unit she had in mind. She considered the individual children and the several ability groups in the class as to their learning needs — their various levels of achievement in reading, in number, in language, in music, in construction, and in social living. With these in mind she outlined the attainments that seemed to her most important for the unit to work toward. She then listed problems that had arisen from the children's interest in music

<sup>1</sup> These weekly broadcasts for school children were part of a civic undertaking to provide the right kind of music for the community.

and outlined experiences that might help them solve these problems at the same time that they provided for development of many of the attainments outlined.

Emphasis should be placed on the fact that the plan made was considered only as tentative, but it enabled the teacher to be definite in her own thinking as to the children's needs and to be ready to direct the children to experiences that would satisfy their interests and at the same time bring about the types of development they most needed. The plan served moreover as a measure of the children's progress as the unit developed. Finally in making her summary report of the actual development of the unit, the teacher followed the outline of her original plan. She listed attainments that she had at first chosen as her goals and appraised the unit in terms of progress toward these. But it is very important to keep in mind that the development of the unit was never circumscribed by a rigid preconception of what it should be. Progress was a natural evolution, directed by the conditions and needs of the pupils. The original plan was only a guide and was always readily flexible to the needs and opportunities of actual circumstances.

### IN A MUSIC STORE

Unit of work developed with a primary special class.  
Chronological ages: 8 years 6 months to 11 years 8 months.  
Mental ages: 6 through 8 years.

#### TEACHER'S PRELIMINARY ANALYSIS OF THE POSSIBILITIES IN THE UNIT

##### THE SETTING

This class attended several radio concerts given by the Rochester Civic Orchestra. The first concerts introduced

the various instruments used in the orchestra. The children became interested in these and modeled bassoons, flutes, violins, and other instruments from plasticine, cut out horns from paper, and painted pictures on the easel interpreting favorite selections. At the same time a set of chimes was made from bottles. On these many tunes have been learned. The children are now begging for an orchestra of their own and for permission to play in assembly. This unit will attempt to satisfy both these desires.

#### ATTAINMENTS THAT MAY BE WORKED FOR

Attainments were outlined with a view to strengthening ones already achieved as well as to developing new ones.

#### *Habits and Attitudes Needed in Many Life Situations*

1. Obedience to general rules of classroom and school, and to law.
2. Attention to work at hand.
3. Co-operation with teacher and with other children.
4. Individual responsibility in beginning and carrying out undertakings.
5. Courtesy and politeness to other members of class, to visitors, and to others with whom the children come in contact.
6. Perseverance in undertakings.
7. Good humor — acceptance of criticism.

#### *Health*

1. Knows the need for sanitation in use of instruments, especially horns.
2. Realizes need for cleanliness of hands in handling instruments and music.
3. Knows need for proper light on music to save eyestrain.
4. Realizes importance of neat appearance of clothes for public performers.

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### *Social Studies*

1. Knows something about instruments used by people long ago.
2. Knows something about how instruments of long ago are like those used today.
3. Knows that there are stores that sell only music.
4. Knows that these music stores are located in the downtown districts of the city where other stores are.
5. Knows how to reach Eastman School. Knows its location in the city and the direction it lies from school.
6. Knows that many men and women go to the school to study music.
7. Realizes the variety of kinds of instruments that the students learn to play.
8. Knows something about different kinds of materials that musical instruments are made from.
9. Begins to appreciate Rochester as a leader in music.

### *Music*

1. Recognizes many kinds of music.
2. Enjoys good music.
3. Expresses emotions through rhythm.
4. Recognizes the most common instruments of the orchestra and how they are used.
5. Recognizes five or six good compositions, giving the name of each.
6. Lives more happily because of the joy music brings.

### *Tool Subjects*

Attainments in the tool subjects are outlined at three different levels — Group I children are from 8-6 to 10-10 years of age chronologically, approximately 6-0 to 6-6 mentally; Group II is from 9-6 to 11-8<sup>1</sup> chronologically, approximately 6-6 to 7-0 mentally; Group III is from 11-0 to 11-6 chronologically, from approximately 7-0 to 8-0 mentally.

<sup>1</sup> Two children 11-6 and 11-8 who have vocabulary difficulties.

# English

## GROUP I

1. Contributes simple statements to group discussion of experiences and to co-operative group stories.
2. Allows others to complete their remarks without interrupting.
3. Addresses others in a kindly tone.
4. Shows interest and participation in the simple dramatization of an experience that is of general interest to the class.
5. Enjoys telling and hearing others tell favorite stories or poems.

## GROUP II

1. Makes contribution to the discussion of experiences.
2. Shows improvement in expressing ideas in complete sentences.
3. Enjoys the dramatization of familiar experiences.
4. Recognizes in written expression such language forms as
  - (a) Capital letter for own name.
  - (b) Capital letter at beginning of a sentence.
5. Enjoys telling and hearing others tell favorite stories or poems.

## GROUP III

1. Makes contributions to the discussion and carrying out of experiences.
2. Uses three or four sentences in giving a simple report or original story.
3. Answers questions so that he makes his meaning clear.
4. Helps in planning and carrying out dramatization.
5. Makes use of capital letter for
  - (a) Own name.
  - (b) Beginning of sentence.
  - (c) Pronoun I.
6. Makes use of period at end of statement.
7. Copies notes of invitation, thanks, etc., co-operatively composed by class and teacher.
8. Addresses envelopes for above.
9. Enjoys telling and hearing others tell favorite stories or poems.



## *Reading Habits and Skills*

### GROUP I

1. Reads silently first what is to be read orally.
2. Reads from blackboard and charts simple stories about his own interests.
3. Enjoys making his own book of pictures and stories.
4. Associates twenty to fifty words with their symbols.
5. Reads simple directions from the blackboard.
6. Finds enjoyment in books because of the power of the pictures to tell the story.

### GROUP II

1. Reads silently first what is to be read orally.
2. Shows comprehension by relating words instead of reading word by word.
3. Reads aloud distinctly so that the rest of the class may hear without difficulty.
4. Desires to read a story because of interest in the pictures.
5. Answers oral questions pertaining to the text.
6. Finds enjoyment in books through studying the pictures and attempting to read simple sentences and familiar words of stories and poems.

### GROUP III

1. Reads silently first what is to be read orally.
2. Shows comprehension by grouping related words.
3. Reads aloud distinctly and with understanding.
4. Desires to read a story because of interest in the pictures.
5. Answers oral questions pertaining to the text.
6. Answers short written questions pertaining to the text.
7. Reads titles of books.
8. Uses table of contents to find a story.
9. Finds enjoyment in books sufficiently simple in content to stimulate the desire to read them independently.

## *Reading Vocabulary*

### GROUP II

1. Reads from blackboard
  - (a) Simple directions and notices.
  - (b) Co-operative stories.
  - (c) Familiar songs and poems.
2. Recognizes when presented in different context words that occur most frequently in stories in basal text.

### GROUP III

1. Increases reading vocabulary through
  - (a) Co-operative stories.
  - (b) Familiar songs and poems.
2. Recognizes when presented in different context words that occur most frequently in stories in basal text.

## *Writing and Spelling*

### GROUP I

1. Maintains good position
2. Shows gradual improvement in tracing letters.

### GROUP II

1. Maintains good position.
2. Shows improvement in formation of words and letters.
3. Spells very simple words needed in written work.

### GROUP III

1. Maintains good position.
2. Makes capitals and small letters and writes words without a copy.
3. Masters basic words needed in written work.

## *Arithmetic*

### GROUP I

1. Senses value of 1 and 5.
2. Counts in sequence twenty or twenty-five objects.
3. Increases ability to know left and right.

### GROUP II

1. Senses value of 1, 5, 10.
2. Knows that long hand of clock or watch indicates the half hour.
3. Counts in sequence to 50.
4. Increases in understanding of such concepts as
  - (a) here — there
  - (b) near — far.
  - (c) wide — narrow.

### GROUP III

1. Appreciates value of fifty cents
2. Appreciates value of small pieces of money and makes change.
3. Tells time accurately by hour, half hour, quarter hour. Knows divisions of time, such as minute, day, week.
4. Reads and writes numbers to 1000.
5. Knows how to subtract three-place numbers with all kinds of borrowing.

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### *Hand Skills and Related Arts*

#### GROUP A

*(Chronological Ages 8-6 to 10-0)*

1. Handles scissors correctly.
2. Traces and cuts to line.
3. Folds for even edges.
4. Knows rainbow colors.
5. Pastes carefully.
6. Uses clear colors in painting.
7. Molds simple cylindrical forms in plasticine and clay.
8. Begins to learn to saw to line.
9. Holds hammer correctly.
10. Wears thimble.
11. Threads needle.
12. Does running stitch.

#### GROUP B

*(Chronological Ages 11-0 to 11-8)*

1. Selects suitable pictures.
2. Measures accurately inch and half inch.
3. Cuts simple letters.
4. Gets some degree of balance and arrangement into book covers and posters.
5. Combines two harmonious colors with a neutral.
6. Folds for even edges.
7. Pastes carefully.
8. Expresses ideas in mass drawings of objects.
9. Uses clear colors in painting.
10. Expresses ideas by modeling from a single ball of plasticine or clay.
11. Recognizes good points in form and construction of modeling.
12. Develops skill in sawing to line.
13. Knows how to use sandpaper.
14. Fits parts together and fastens them with glue or nails.
15. Applies stain and shellac.

16. Paints surfaces evenly.
17. Wears thimble.
18. Applies simple pattern to cloth and cuts by it.
19. Uses a measure in folding hem.
20. Uses hemming stitch and backstitch.



The miniature music store constructed from paper.

PROBLEMS AND EXPERIENCES THAT MAY BE  
DEVELOPED

*Questions That May Be Raised*

- Where can we see some of the instruments of the orchestra? Can we visit a music store? What is the Eastman School of Music?
- Can we hear and see these instruments played?
- How can we form an orchestra? What instruments will we make? What will we make them of?
- Can we use our orchestra to entertain the school?

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### *Experiences That May Furnish Answers*

Excursions to Levis Music Store, Music Lovers' Shop, Eastman School of Music.

Planning of trips. Discussion of safety; of behavior on street, in store, and in the music school; of politeness to clerks and attendants; of what to look for in the stores and in the music school.

Checking upon return the results of the trips: instruments seen, posters seen, store displays, origin of instruments.

Inviting various people to entertain us with music, and acting as host to them: Miss T., singing; school orchestra, with violin, flute, cello, trumpet, piano; Miss S.'s class from a near-by school with their toy band; Mrs. D. and her orchestra, with saxophone, banjo, drum, traps, piano, trumpet.

Listening to victrola and radio.

Making our own orchestra. Gathering materials for the battery, the woodwinds, and the strings. Making the instruments. Trying them out for tone quality.

Organizing the best instruments into an orchestra.

Preparing our play, "In a Music Store." Discussion and selection of songs, orchestra numbers, and dances suitable for an assembly performance. Discussion and selection of characters and costumes needed.

Writing the play. Rehearsing the play.

Keeping records of our work. Making and illustrating reading books.

### *Experiences Supplementary to the Unit That May Be Needed*

Some experiences supplementing the unit are needed to give practice in subject-matter attainments and in necessary daily health habits.

*Health.* Morning inspection. Games in schoolroom and gymnasium. Clean-up Week. Mid-morning lunch.

*Arithmetic.* Necessary practice in fundamentals.

*Reading.* Groups I and II read from basal readers, *Pathway to Reading* and *Child's Own Way Series*.

## BOOKS THAT MAY BE HELPFUL

- McCONATHY, O., and others. *The Music Hour in the Kindergarten and First Grade*. Silver, Burdett & Co., New York, 1929.
- R. C. A Victor Company. *Music Appreciation for Children*. Victor Talking Machine Company, Camden, New Jersey; 1930.
- BURCHENAL, E. H. *Folk Dances*. E. C Schirmer Music Company, Boston; 1929.
- DAMROSCH, WALTER; GARTIAN, G. H., and GEHRKENS, K. W. Universal School Music Series, *Manual for Music Appreciation*. Hinds, Hayden, & Eldredge, Inc., New York, 1928
- COLEMAN, SATIS N. *Creative Music for Children* John Day Company, Inc, New York; 1931.
- Course of Study for Music*. Department of Special Education, Rochester Public Schools, 1929.
- HARTMAN, GERTRUDE, and SHUMAKER, ANN. *Creative Expression through Art*. Progressive Education Association, Washington, D. C., 1926.

TEACHER'S SUMMARY REPORT OF ACTUAL  
DEVELOPMENT OF THE UNIT

Two pictures were put on the bulletin board. One was "The Happy Family," which showed members of a family playing different instruments and a little girl trying to dance. The second picture was "El Jarez," by Sargent, in which a girl dressed in black lace mantilla with white satin dress was dancing, accompanied by guitars and violins.

By the time school was called, the new pictures had been discovered; so a discussion followed about the need for music with dancing. At that time another picture, a large photograph of the Rochester Civic Orchestra, was produced and a discussion of orchestras began. Someone again suggested that it would be nice if we had a "band." It was evident that enthusiasm for music was gaining in the group. There was much discussion of the orchestra picture, the different instruments, and the part that the instruments played in some of the pieces the children had heard. There is a piano in the classroom, so the enjoyment of melodies and rhythm is a frequent experience. Before the week was over, we had decided to make some visits to schools and stores to learn what we could about instruments. A trip to Miss

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S.'s special-class room and an entertainment by their toy band, plus a peep into *Creative Music* by Satis Coleman, gave the start for the choice of material for our own orchestra.

The decision to make the instruments out of scrap materials led us to pause long enough to visit a music store to see how to put the instruments together.

The desire to show our orchestra to others gave further opportunity for the children to ask if they might perform in assembly.

Thus, the unit began and worked itself into the common purpose of creating an orchestra and perfecting our playing for the approval of our audiences.

### ACTIVITIES CONTRIBUTING TO VARIOUS ATTAINMENTS

#### *Habits and Attitudes Needed in Many Life Situations*

Increased understanding of co-operation. (3)<sup>1</sup>

Perseverance on a piece of work, even though tired. (2, 6)

Great improvement in courtesy to guests, to clerks, and to others who came to our room because of general interest in our work. (5)

Better attention in listening in assembly, both in general assemblies and special music assemblies. (1-2)

Cheerful acceptance of disappointments. (3-7)

Increased pride in personal appearance after noting the appearance of the people of other orchestras. (4)

Sustained attention and persevering effort in originating instrument for the orchestra. (2, 6)

#### *Health*

Discussion of why only one child may play a certain horn; of washing hands before playing an instrument. (1, 2)

Eye care: discussion of why our seats must face a certain direction when we are singing; why the chimes were moved; why we must adjust the curtains when the sun comes on our books and writing. (3)

<sup>1</sup> Italic numbers in parentheses indicate the attainments realized. Number designations are those used in the lists on pages 261 to 267. These are for all groups in the class unless otherwise indicated.

- Discussion of appearance of clothes of the men in the Civic Orchestra; of why the children must have neat clothes if they are to play instruments before company. (4)
- Discussion of traffic signals and rules for pedestrians.

*Social Studies*

- Trip through Levis Music Store to find out what they sold. Learned location — near school on Main Street, other stores near it. (4)
- Trip to Eastman School of Music. Learned location of school and how to go there. Saw and heard students of school practicing on many different kinds of instruments. Handled instruments, discovering what material was used in their construction. (5-8)
- An appreciation of Rochester's activities in the interests of music: Eastman School of Music, Civic Orchestra, radio concerts in school. (9)
- "People a long time ago had music." Studied pre-historic instruments in Dr. Penny's studio. Studied history of drums, piano, and horns. Studied history of the making of violin strings. (1-2)
- "Other countries and cities have orchestras and music." Instruments were loaned to us from Buffalo, also a ukelele with a Hawaiian stamp. The children examined a trumpet that came from Germany. They handled an instrument from Jerusalem and some Indian tom-toms. One child has a cousin who has just returned from studying violin in Italy.

*Music*

- Various instruments were seen and heard in the classroom: piano, trumpet, violin, banjo, flute, tom-tom, ukelele. (1-2, 4)
- Various instruments were seen and heard outside the classroom: tympani, violin, xylophone, tuba, clarinet, trumpet, bass viol, oboe, pipe organ, cello, bassoon, saxophone, accordion, Indian tom-tom, electric piano, Hawaiian instruments, marimba, bagpipes, harp, trombone. (1-2, 4)



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Various places were visited to hear and learn about music :  
Miss S.'s special class at a near-by school to hear toy band ; Mrs. K.'s special class at a near-by school to hear toy band ; music store ; Monroe High School to hear the Rochester Civic Orchestra ; Eastman School of Music ; radio concerts in home school ; spring festival in home school. (1-2, 4, 6)

Music was heard on the piano. Most of this the children now recognize : (1-2, 5)

"Melody in F," by Anton Rubinstein

"Funeral March of a Marionette," by Charles Gounod

Selections from *Carmen*, by Alexander Bizet

"Amaryllis," by Joseph Ghys

"La Cinquantaine," by Gabriel Marie

"Dancing Doll," by Eduard Poldini

"The Secret," by Jean François Gautier

"Marche Militaire," by Franz Schubert

Other piano music was heard : (2)

"Spanish Dance," a piano duet, by Moritz Moszkowski

"Woodland Sketches," by Edward MacDowell

"A Day in Venice," by Ethelbert Nevin

"Triumphal March," from *Aida*, by Guiseppe Verdi

Music was heard in another classroom on instruments not in home class : (1-2, 4, 6)

Banjo. Chords. Folk songs. Accompaniment for children's singing.

Trumpet. Two oriental marches with tom tom and trumpet. "Melody in F," by Anton Rubinstein.

Violin. "By the Waters of Minnetonka," by Thurlow

Lieurance. "Gypsy Love Song," by Victor Herbert.

Flute, with trumpet and violin. *The Bohemian Girl*, by Michael Balfe.

Radio music was heard : (1-2, 4, 6)

"By the Beautiful Blue Danube," by Johann Strauss

"The Irish Washerwoman," Irish folk song

"The Stars and Stripes Forever," by John Philip Sousa

"The Funeral March of a Marionette," by Charles Gounod



Instruments made by the children and played on by them.

"From an Indian Lodge," by Edward MacDowell

"Triumphal March," from *Aida*, by Guiseppe Verdi

"Ride of the Valkyrie," from the *Valkyrie*, by Richard Wagner

"Scarf Dance," by Cecile Chaminade

"To a Wild Rose," by Edward MacDowell

A concert by the Civic Orchestra was heard at Monroe High School:

"Scotch Poem," by Edward MacDowell

"Who is Sylvia?" by Franz Schubert

"Volga Boat Song," Russian folk song

"Fingal's Cave," by Felix Mendelssohn

"Indian War Dance," by Charles Sanford Skilton

New songs were learned in class, others reviewed. (6)

Rhythm work was continued in imitation of various instruments; rhythms of songs being learned were tapped; marching; tapping or clapping for recognition of tone (loud — soft, fast — slow) and of tempo ( $\frac{3}{4}$  time,  $\frac{6}{8}$  time,  $\frac{4}{4}$  time). (3)

Rhythm was continued in folk dances: (3, 6)

Tantoli, Bleking, Nixie Polka, Kinderpolka, Ace of Diamonds, Danish Dance of Greeting.

Rhythm was continued in work with instruments made by the children. (3)

Victrola music was heard: (1-2, 6)

"Amaryllis," by Joseph Ghys

"From an Indian Lodge," by Edward MacDowell

Selections from *Carmen*, by Alexander Bizet

"To a Wild Rose," by Edward MacDowell

"Indian War Dance," by Charles Sanford Skilton

"Indian Lament," by Antonin Dvorák

"Bell Song," from *Lakme*, by Leo Delibes

"Naval Cadets March," by John Philip Sousa

"American Airs Medley," by Victor Herbert

"Fiddle and I," by Arthur Goodeve

Difference between an orchestra and band was studied.

Through pictures the organization of an orchestra was studied. Names of musicians were learned: Eugene Goossens, Edward MacDowell, Anton Rubinstein, Giuseppe Verdi, and others.

### *Tool Subjects*

#### *English*

Oral discussion of the following topics:

Behavior of people on streets and in stores.

Levis Music Store — "What Instrument I Liked."

(1-2 for Groups I and III; 1-2, 4, for Group II)

"Why I Liked Miss S.'s Orchestra."

Ways of making various instruments.

The Eastman School of Music. (1-2 for Group III)

The spring festival at the city normal school.

"The Civic Orchestra as We Saw It at Monroe High School."

Possibilities of making a miniature music store. (1-2 for Group I; 1, 3, for Group II; 1, 4, for Group III)

Possibilities of a play for assembly, including a conversation between a clerk and customer in a music store.

(1, 4, for Groups I and III; 1, 3, for Group II)

Chose title for play and got at work of writing parts.

(1-2 for Groups I and II; 1, 4, for Group III)

Co-operatively wrote letters and addressed envelopes:

(a) To Miss S.'s class at a near-by school, thanking them for showing us their band. (4 b for Group II; 5 b, 7, 8, for Group III)

(b) To Dr. Penny at Eastman School of Music, thanking him for showing us his prehistoric instruments and allowing us to play them. (4 b for Group II; 5 a, 5 b, 5 c, 7-8, for Group III)

Copied letters and the poem, "Marching Song," by Stevenson. (5 b, 5 c, 7, for Group III)

Orally thanked persons who had entertained us. (3 for Group I; 2 for Group II; 1 for Group III)

Wrote original sentences:

(a) For the "Morning News." (1 for Group I; 1-2, 4 b, for Group II; 1 for Group III)

(b) Using musical terms. (1 for Group I; 5 b, 7, for Group III)

Impersonated members of an orchestra.

Reviewed poems individually: (5 for Groups I and II; 9 for Group III) Lady Mouse, The Elf Man, A Good Play, Elf and Dormouse, Marching Song, I'm Much Too Big for a Fairy.

THE MORNING NEWS		
HOME	SCHOOL	WEATHER
Tony was playing a "kazoo" last night.	We went to the Monroe High School and heard the Civic Orchestra. The best violin player sat on the left. His little boy played in our assembly.	It is warmer today. It is a little cool.
Phillip went to the playground after school. He and Joe had a race. They tied for first place.		

Part of the class paper to which all groups contributed.

## Reading

### GROUP I

Discussed the picture, "The Happy Family." Contributed four simple sentences about the picture. (1-3)

Made several co-operative stories about excursions and about how we made our instruments. Put stories into book form. (1-4)

Found magazine pictures to illustrate people playing instruments.

Read story "The Apple Man," from *Pathway to Reading*, Primer. (1)

Reviewed: simple action phrases (1); names of objects in room; simple directions. (5)

### GROUP II

Discussed picture, "The Dancing Girl," by Sargent. Contributed for reading books five sentences describing the picture. (5)

Spent some time putting co-operative stories about our trips into book form and rereading them. (1-3. *Vocabulary 1 c, 2*)

Read familiar poem, "Marching Song," by Stevenson. (*Vocabulary 1 c*)

Read "Surprise Stories" from pages 1-21 of *Children's Own Way Series*. (1-6)

### GROUP III

Unfamiliar poem, "Singing," by Stevenson, read silently and orally. (1-3)

First stanza memorized and typed for own reading book. (*Vocabulary 2*)

Several co-operative stories about our excursions to various places, usually around six sentences given by children and printed on board. (*Vocabulary 1 a*)

These reading stories were put into book form and reread. (*Vocabulary 1 a, 2*)

Read stories from *Pathway to Reading*, Second and Third Readers. (1-3)

## Writing and Spelling

### GROUP I

Simple words on board for tracing work. (2)

Same word on paper for tracing and independent writing, such as *drum, horn*. (1-2)

No definite attempt to teach spelling of words, but some of the group can spell about ten words orally.

### GROUP II

Spelling words. (3)

Letters of thanks. (2)

Sentences using spelling words. (3)

Copied poems. (2)

Words (thirty review and new), such as *play, make, skin, box, tube, sand*. (2-3)

### GROUP III

Same as for Group II, except that different words and more difficult sentences were used.

Words (forty review and new), such as *music, dancing, singing, children, class, store*. (2-3)

# Arithmetic

## GROUP I

Worked with help of concrete objects on addition combinations of

1 2 3 4 5 6 7 8 1 2 3  
1 1 1 1 1 1 1 1 2 3 (2)

Counted in sequence to ten without objects, and to twenty-five with objects. (2)

Played store, buying toy instruments for one cent and five cents. (1)

Gained understanding of idea of left and right by placing money on left side, using right hand, etc. (3)

Wrote numbers to 10.

## GROUP II

Addition without carrying.

Part of group began addition of two-place numbers with three columns, including carrying, as 24

13

26

Counted in sequence to fifty without using concrete objects. (3)

Reviewed the functions of the long hand on the clock. (2)

Developed ability in understanding the ideas of *here* and *there*, *near* and *far*, *wide* and *narrow*, in connection with construction work. (4)

Played store, buying toy instruments at one cent, five cents, and ten cents. (1)

Counting by 1's, 2's.

## GROUP III

Drill in subtraction in which one number is borrowed, as 61

- 18 (5)

Drill in checking subtraction. (5)

Began subtraction of three-place numbers, using one borrowing, as

961

- 118 (5)

Began subtraction of three-place numbers in which there were two borrowings, as 943

- 196 (5)

Read and wrote numbers to 100 on board. (4)

Read price marks. (1)

Told time to half hour and quarter hour. (3)

Made change from fifty cents. (1)

Introduced multiplication by 2. (One boy learned to use two-figure multiplier.)

Reviewed oral counting by 1, 2, 3, 5, 10, 25, 50, 100.

## REMARKS

In general the class is weak on the addition and subtraction combinations between 10 and 20, which is not evident in written work because there they resort to counting on their fingers.

Most of the class, especially Groups II and III, can tell time on the hour, half hour, and quarter hour. They can tell the time for rehearsals and for concerts, and the length of time required to play selections.

Great improvement has been made in the use and handling of money in making purchases amounting to fifty cents.

*Hand Skills and Related Arts*

Made music notebooks. Title "Music" was made of letters one by one and a half inches cut freehand from paper. Pictures of musical subjects were cut out and pasted in. (1-5 for Group A; 1-7 for Group B)

Painted oatmeal boxes and flowerpots for drums.

Made sandpaper blocks for instruments, glued handles on them, and painted them. (8-9 for Group A; 12-16 for Group B)

Cut, sandpapered, and shellacked sticks for rhythm sticks.

Cut, sanded, and stained sticks for cello.

Cut, sandpapered, and shellacked sticks from doweling. Attached bells with leather straps.

Papered big box for a miniature music store. Made instruments, such as victrolas, piano, drums, accordions, radios, from paper and plasticine. (1, 7, for Group A; 1, 10-11, for Group B)

Sanded cigar boxes for violins. Cut string boards for them and sanded them. Drilled holes for pegs and put violins together with screws. Stained them.

Sanded beef bones.

Glued handles on cow bells.

Made handles for banjos and painted them.

Cut and sanded three standards for cymbals.

Sandpapered and stained a conductor's box.

Made easel paintings and blackboard drawings. (8-9 for Group B)

*Activities Supplementary to Unit*

Made boxes for Easter eggs. (5-6 for Group A; 5-7 for Group B)

Made baskets for candy.

Made place cards for Easter table.

Dyed Easter eggs.

Made marble bags for the boys. (10-12 for Group A; 17-20 for Group B)



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Pieced four small quilts for dolls' beds.

Made towels.

Made new aprons for boys. (17-20 for Group B)

### INSTANCES IN WHICH THIS MUSIC EXPERIENCE HAS CARRIED OVER INTO LIFE OUTSIDE THE CLASSROOM

D. C. made a violin at home.

T. I. brought a gourd shell from home for a horn.

P. F. asked his father to buy him a banjo.

J. M. asked his father to let him study violin.

D. C. asked his father to let him study violin.

J. I. organized a "comb quartette" of little girls on the playground.

J. L. went to a Friday afternoon concert in Kilbourn Hall alone.

Three children reported having heard the "Melody in F" at the movies.

J. M. bought a selection from *Aida* for the player piano.

### A UNIT ON LIGHTING

The second unit to be reported was developed with an intermediate group of boys from twelve to fourteen years of age with mental ages of approximately seven, eight, and nine years. These boys were having a school experience that many boys of their ages have — making lamps for their homes. The teacher saw the possibility of using this as a starting point to create an active interest in lighting and its development. In comparing the teacher's outline of possibilities for this unit with the account of the actual development of the unit, one notes that many experiences developed that were not planned for, and that often one experience led to another without regard for any preconceived plan. The exhibit and the number experiences are outstanding examples of such development.

The teacher's summary statement of probable outcomes in pupil growth that might result from the unit indicates clearly how personality and social habits as well as subject learnings may accrue from a unit of work.

The preliminary statement of attainments to be worked for in these units may seem unreasonably detailed, but one must consider the slow growth in specific learnings that characterizes the progress of the slow-learning child and the need to make provision for persistent and well-considered practice toward their achievement. Such a detailed list also helps the teacher to provide for the learning or practicing of the desired attainments in meaningful situations. Without such a guide to the orientation of this practice, the attainments may be regarded only as isolated facts or skills in the mind of the teacher and may be developed as such in the classroom. Hence the need for careful specific statement of desired attainments in relation to meaningful experience.

## LIGHTING

Unit of work developed with a special class of intermediate boys. Chronological ages: 12 to 14 years. Mental ages: 7 to 9 years.

### TEACHER'S PRELIMINARY ANALYSIS OF THE POSSIBILITIES IN THE UNIT

#### THE SETTING

A boy who made a lamp last year wished to make another this year. Other boys became enthusiastic about making lamps for their homes. The activity was undertaken and along with it there developed a general interest in the subject of lighting.

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### ATTAINMENTS THAT MAY BE WORKED FOR

#### *Habits and Attitudes Needed in Many of Life's Situations*

1. Is courteous, respectful, and fair to others.
2. Behaves correctly in public places.
3. Has sense of responsibility toward completing work started and toward doing his part of group work.
4. Has personal pride.
5. Has pride in his surroundings.

#### *Health*

1. Shows a desire for personal cleanliness and neat appearance.
2. Appreciates some of the benefits of good lighting.

#### *Social Studies*

1. Has some knowledge of what electricity is.
2. Has some knowledge of how it comes to us.
3. Has some knowledge of relation of water power to electricity.
4. Knows some uses of lights: street signals, locomotive lights, lighthouses, medicinal lamps, aerial signals.
5. Has some knowledge of where we get kerosene.
6. Has some knowledge of how illuminating gas is made.
7. Has some knowledge of how it is brought to us.

#### *Tool Subjects*

Attainments in the tool subjects are outlined at three different levels. The children in Group I were from 12 to 13-6 years old chronologically, and had I.Q.'s of from 66 to 75; Group II children were from 13 to 13-6 chronologically and had I.Q.'s of from 59 to 65; Group III children were from 12 to 14-6 chronologically and had I.Q.'s of from 62 to 75.

# English

## GROUP I

1. Contributes to discussion of experiences of common interest to group.
2. Holds interest of class when talking.
3. Asks questions about subject at hand.
4. Expresses ideas so that they are understood.
5. Tells simple original story.
6. Begins to recognize that a group of related ideas is called a paragraph.
7. Makes correct use of
  - (a) Capital letter at beginning of sentence.
  - (b) Capital letter for pronoun I.
  - (c) Period at end of sentence.
  - (d) Question mark after question.
8. Copies requests, invitations, etc.

## GROUP II

1. Contributes to discussion of experiences of common interest to group.
2. Holds interest of class when talking.
3. Expresses ideas so that they can be understood.
4. Gives attention to sequence when expressing ideas orally.
5. In giving simple or original reports
  - (a) Selects good title.
  - (b) Avoids "and," "then," "so."
  - (c) Gives main points in order.
6. Copies letters, invitations, etc.

## GROUP III

1. Contributes to discussion of experiences of common interest to group.
2. Holds interest of class when talking.
3. Answers questions directly.
4. Asks questions relating to subject at hand.
5. Recognizes and learns to use new words.
6. Writes notes of thanks, invitations, short friendly letters of one paragraph, independently.
7. Addresses envelopes.
8. Shows increased social poise in
  - (a) Introducing people.
  - (b) Conduct during assembly, lectures, concerts.

## Reading Habits and Skills

1. Reads over silently first what is to be read aloud.
2. Answers oral or written questions pertaining to text.
3. Selects and reads parts of story that make greatest appeal.
4. Answers a few short written questions.
1. Reads over silently first what is to be read aloud.
2. Enunciates clearly and distinctly in oral reading.
3. Asks and answers questions pertaining to material read.
4. Selects and reads parts of story that make greatest appeal.
5. Reads titles of books.

## *Reading Vocabulary*

### GROUP I

1. Reads silently from slips of paper :
  - (a) Simple directions.
  - (b) Answers to questions.
2. Reads from chart :
  - (a) Familiar songs and poems.
  - (b) Simple directions.
  - (c) Co-operative stories.
3. Reads and understands common signs.

### GROUP II

1. Determines through context the meaning of unfamiliar words.
2. Makes a list of unfamiliar words in a story read independently.

### GROUP III

1. Is interested in newspaper. Can use one independently and make simple report on what is read.

## *Writing and Spelling*

### ALL GROUPS

1. Maintains good position.
2. Uses good slant, spacing, and letter form.
3. Masters basic words needed in written work.
4. Desires to spell correctly in situations where spelling is necessary.

### *Literature*

### ALL GROUPS

1. Listens with increased interest to new stories and poems.
2. Enjoys telling, retelling, and hearing others tell or read favorite stories and poems.
3. Repeats from memory favorite poems.

# *Arithmetic*

## GROUP I

1. Knows how to add one- and two-place numbers with a limited number in columns, with and without carrying.
2. Knows how to subtract two-place numbers without borrowing.
3. Tells time accurately by hour and half hour. Knows divisions of time — day, week, month, and year.
4. Knows how to check results accurately.
5. Knows how to use addition and subtraction facts taught thus far in simple one-step problems.

## GROUP II

1. Knows how to use addition and subtraction facts in simple one-step problems.
2. Knows how to multiply a two-, three-, or four-place multiplicand by a one-place multiplier.
3. Knows units of measure as far as taught and makes application of them.
4. Appreciates value and is able to make change with money to fifty cents.
5. Knows how to check results accurately.

## GROUP III

1. Knows how to solve problems that arise calling for the use of one process or more.
2. Reviews how to add five-place numbers.
3. Reviews how to subtract five-place numbers with borrowing.
4. Reviews and drills even and uneven two-place dividends and one-place divisors.
5. Knows meaning of units of linear measure and makes simple application of them.
6. Appreciates value and is able to make change with money to five dollars.
7. Knows how to multiply a four-place multiplicand by a three-place multiplier.
8. Knows how to divide a three-place dividend by a one-place divisor with or without remainder.
9. Knows how to check results accurately.

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### *Hand Skills and Related Arts*

#### *Bookmaking*

1. Has ability to measure and cut material as needed.
2. Applies lettering on cover.

#### *Making of Charts*

3. Selects suitable material for mount.
4. Mounts material neatly.
5. Cuts letters of suitable proportion.

#### *Block Printing*

6. Makes suitable design for cover.
7. Carves block for printing.
8. Applies block-printed design to book cover.

#### *Modeling*

9. Has perception of form and size.
10. Expresses ideas in clay.
11. Creates objects of good proportion.

#### *Woodworking*

12. Knows names of tools used.
13. Measures one inch and one-half inch.
14. Knows care and use of rip and crosscut saws.
15. Shows ability to assemble models of four or more parts.
16. Applies stain evenly.

#### *Lamp Shades*

17. Gains appreciation of simple design and color.
18. Selects suitable design for shade.
19. Applies design to shade with crayola or oil painting.

#### *Electricity*

Understands simple processes of electric wiring.



On a day set aside for receiving visitors these boys entertained the class guests by telling them about Edison and the Golden Jubilee of Light.

#### PROBLEMS AND EXPERIENCES THAT MAY BE DEVELOPED

##### *Questions That May Be Raised*

While the boys were engaged in this activity, certain questions arose:

What is the correct way to wire lamps?

What is electricity?

Where does it come from?

How is it brought to us?

Why are we warned to keep away from "live wires"?

Who discovered electricity?

What was the "Golden Jubilee of Light"?

Who was Thomas Edison?

What did people use before they had electricity?

##### *Experiences That May Furnish Answers*

A trip to Municipal Museum to examine an exhibit on historical development of lighting.

(a) Write principal and parents for permission for trip.



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- (b) Discuss location, direction, best way to get there, conduct in Museum.
- (c) Specific questions to answer.

### Experiences following trip to Museum.

- (a) Discuss points of special interest.
- (b) Investigate further for verification of facts.
- (c) Write note of thanks to guide for his interest and instruction.
- (d) Arrange to get material from library.
- (e) Write to various places to secure any available material on the subject.
- (f) Follow any news in daily paper.
- (g) Post information on bulletin board.
- (h) Make candle in candle mold.

### A visit from representative of local gas and electric service company to discover ways in which company can assist in class project.

- (a) Write a letter to representative telling about class project and asking him to come to talk to class.
- (b) Prepare for visit.

### Experiences following the visit to public service plant.

- (a) Discussion of points of special interest.
- (b) Investigation of further material after visit for verification of facts.
- (c) Write note of thanks to representative for his interest and instruction.

### Completion of lamps.

- (a) Wire lamps.
- (b) Make shades.
- (c) Decide kinds of bulbs to use.
- (d) Decide where to place lamps in home to give the best lighting.

### The making of charts and books in which to keep work.

## BOOKS THAT MAY BE HELPFUL

- ALLEN, N. B. *How and Where We Live*, pages 94-102. Ginn & Co., Boston, 1924
- ANDRESS, J. M., and EVANS, W. A. *Health and Good Citizenship*, page 164. Ginn & Co., Boston; 1925.
- BACHMAN, F. P. *Great Inventors and Their Inventions*, pages 247-253. American Book Company, New York; 1918.
- BAKER, C. B. and E. D. *Bobbs-Merrill Readers*, pages 97-126. Bobbs-Merrill Company, Indianapolis, Indiana; 1923-1925.
- COBB, W. F. *Chalk Talks on Health and Safety*, page 123. The Macmillan Company, New York; 1925.
- DRESSEL, HERMAN; ROBBINS, MAY; and GRAFF, ELLIS U. *The New Barnes Readers*, pages 225-263. Laidlaw Brothers, Inc, New York; 1924-1925.
- EARLE, A. *Home Life in Colonial Days*, pages 32-51. The Macmillan Company, New York; 1898.
- HOUGH, W. R. *The Story of Fire*. Doubleday, Doran & Co, Inc, Garden City, New York, 1928.
- HUNGERFORD, E. *The Story of Public Utilities*, pages 113-126 G. P. Putnam's Sons, New York, 1928
- Literary Digest*, Vol. CIV, No. 12 (March 22, 1930), page 23, "How Common Things Work"
- MOWRY, W. A. and A. M. *American Inventions and Inventors*, pages 61-96 Silver, Burdett & Co., New York, 1900.
- NEWMAYER, S. W., and BROOME, E. C. *The Human Body and Its Care*, pages 237-255 American Book Company, New York; 1928.
- RAWSON, M. N. *Candle Days*, pages 171-200. D. Appleton-Century Company, Inc, New York; 1927.
- WELLS, M. E. *How the Present Came from the Past*, pages 1-47, 106-109, 131-138 The Macmillan Company, New York, 1932.
- World Book* O'Shea, M. V. (Ed.) W. F. Quarrie & Co, Chicago, 1929.
- World Book Encyclopedia*. O'Shea, M. V. (Ed.). W. F. Quarrie & Co., Chicago; 1931

TEACHER'S SUMMARY REPORT OF ACTUAL  
DEVELOPMENT OF THE UNIT

The subject was suggested by a boy who wished to make an electric lamp for his home. Other boys became enthusiastic and the activity was undertaken.

As the boys worked, questions arose. The fact that one boy could not use an electric lamp in his home raised the question: What are other sources of light? We decided to trace the development of light.

Members of the class suggested means of obtaining this information. They decided to consult their parents, older people, books, and pictures; to visit the museum; and to write to factories and stores for information.

In order to further interest and to give the children some background for study, the trip to the museum was planned immediately. Special reading assignments were given and the boys were encouraged to have questions ready for the guide. The result was very satisfactory. The municipal authorities with whom we made the arrangements had an excellent exhibit ready for us. The story of light told by the guide, together with the questions that the boys asked, suggested many phases of the subject for further study.

The first effort of the group was to collect as much material as possible for an exhibit of their own. Charts, block prints, plasticine molds, pictures, and newspaper and magazine articles were contributed. A demonstration of the making of candles was followed by experiments on the part of the boys. All academic work possible was based on the activities of the class.

During this time the boys had been working on their lamps each day and by the time the early history of light was completed they were ready to wire their lamps. This activity introduced the subject of electricity for light. After all the available material on this subject had been used, the boys still felt that there was much more for them to learn; so arrangements were made for a representative from the Rochester Gas and Electric Corporation to come and talk to them. He gave a very interesting demonstration and talk. From this the boys gained ideas about the making of shades for their lamps.

At this point much material had accumulated and the boys were eager to exhibit their work.

With much pride and satisfaction they arranged the exhibit. In addition to charts, bulletin board, scrapbooks, and various kinds of lights, they displayed their notebooks showing how their academic work had been co-ordinated with this study of lighting.

Each boy was allowed to send an invitation to some teacher in the school or to some grade in which he was particularly interested. Acceptances were almost 100 per cent; so we were busy throughout the day set aside for receiving visitors.

The boys entertained their visitors by telling the story of light, reciting poems, and demonstrating how they made their candles, lamp shades, etc.

One morning when Miss T. came into the room and the boys were enthusiastically telling her all that they were doing, it was striking to note that their letter-writing activities were as interesting and vital to them as any other part of their work. They voluntarily told about writing letters to the director of the museum, and to Mr. E. of the Gas and Electric Corporation. Letters had a meaning for them. Their letters had brought satisfying results.

The fact that the unit offered problems in the solution of which all boys could take an active part has had far-reaching results. For instance, it is noticeable that the boys have taken personal pride in the appearance of their room since the unit was started. They have also taken more pride in their own personal appearance and in improving their speech.

#### ACTIVITIES DEVELOPED AND ATTAINMENTS RESULTING FROM THEM

##### *Health*

Proper light in our schoolroom.

Proper light to save eyestrain in our homes.

*Social Studies* — Investigations, readings, discussions (1-7)<sup>1</sup>

What is camphene?

What is kerosene?

<sup>1</sup>Italic numbers in parentheses indicate the attainments realized. Number designations are those used in the lists on pages 282 to 286. When no groups are indicated, attainments were common for all groups in the class.

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Whale fishing.

Of what and how is gas made?

Importance of lighthouses.

Location of oil wells.

Location of coal mines.

Transportation of coal and oil.

Living conditions in early days compared with those of today.

Electricity — what it is, where it comes from, how it comes to us.

Relation of water to electricity.

The many uses for electric light.

### *Literature*

Selected readings on the subject of light. (1-2)

*The Story of Light*, by Jeanette Eaton. (1-2)

Poem, "The Lamplighter," by Robert Louis Stevenson. (1-3)

Poem, "Bed in Summer," by Robert Louis Stevenson. (1-3 for Group I)

Poem, "I Would Be True," by Howard Water. (1-3)

Memory gems. (1-3)

### *Tool Subjects*

#### *English*

Discussing means of obtaining information on light. (1-4)

Planning trip to museum. (1-4)

Writing letters to parents, principal, museum, asking permission to visit museum. (7-8 for Group I; 3, 6, for Group II; 5-7 for Group III)

Discussion of visit. (1-4)

Writing letters of thanks to guide and to Mrs. P. (6-8 for Group I; 5-6 for Group II; 6-7 for Group III)



On a day set aside for receiving visitors these boys explained to the class guests about the importance of proper lighting.

Oral discussion on "How to Make a Candle." (1-4)

Writing story on "How I Made a Candle." (4-5, 7, for Group I; 5 for Groups II and III)

Work on correct speech. The need of this work arose from the fact that the boys were making mistakes in the use of singular and plural words, and in tenses of verbs, etc., in oral and written composition. They made such mistakes as using "mens," "he discover." (3-4)

Lesson on paragraphing. The need of this lesson arose in writing letters and compositions. (6 for Group I; 4-6 for Group II; 6 for Group III)

Writing story of "Lights Used in Early Days." (6-7 for Group I; 5 for Groups II and III)

Oral practice in answering in complete sentences. Some boys had the habit of answering in incomplete sentences. A lesson was presented to improve their oral and written reports. (2-4)

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Talk and demonstration by representatives from the Gas and Electric Company. (8 for Group III)

Discussion of visit of Mr. F. and Mr. O. (1-4)

Writing letter to Mr. F. and Mr. O. (7-8 for Group I; 6 for Group II; 6-7 for Group III)

Study of life of Thomas Edison. (1-5)

Discussion of Golden Jubilee of Light celebration in Rochester. (1-5)

Oral report, "How I Made My Lamp Shade." (1-5)

Oral review of story of light. Poems for exhibit. (1-5)

Writing invitations to exhibit. (7-8 for Group I; 5-6 for Group II; 6-7 for Group III)

Entertaining visitors. (1-2, 5, for Group I; 1-3 for Group II; 1-4, 8, for Group III)

Some new words that were discussed and in some instances added to vocabulary:

A.D.	harbor
appreciate	information
artificial	interesting
B.C.	inventor
bulbs	invention
coke	lantern
company	meter reading
current	museum
dangerous	natural
different	permission
dim	petroleum
discover	pleased
early	present
Edison	protect
electricity	signal
enjoy	sincerely
exhibit	steady
expensive	switch
foggy	tallow
friction	torch
gasometer	wells

*Reading*

*How the Present Came from the Past*, Book One, pages 1-47, 106-109, 131-138. (*Literature 1* for Group I; 1-5 for Groups II and III)

*New Barnes Readers*, Book Five, "The Story of Electricity," pages 226-263. (1-5 for Group III)

*Bobbs-Merrill Readers*, Book Two, "The Fire Brand," page 97; Book Three, "The Lamplighter," page 126. (1-3 for Group II)

*American Inventions and Inventors*. Reading lessons adapted by teacher and stenciled. Subjects: torches, candles, whale oil, lighthouses, kerosene, gas, electric lights.

*How and Where We Live*, pages 94-102. (*Vocabulary 1-2* for Group II; 1-5 for Groups II and III)

Special assignments for individual pupils to read material with view to reporting or reading to class. (1-4 for Group III. *Vocabulary 1-2*)

Reading lessons were assigned from regular readers when material on subject of light was not available.

*Spelling*

Basic words, need of which arose in daily work. (1-4)

Introduction of most commonly used words which grew out of study of light.

*Arithmetic*

Making book-cover designs, chart, lamp shades, candlestick holders, etc., involving measuring. (1-2 for Group I; 1-3 for Group II; 5 for Group III)

Dates: invention of electric light, birth of Edison, opening of first large oil well, etc. (1-2, 4-5, for Group I; 1-2 for Groups II and III)

Cost of lights in early days. (1-2, 4-5, for Group I; 1-5 for Group II; 1-2, 7, for Group III)

Reading electric and gas meters. (3 for Group II; 1 for Group III)



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Figuring cost of electric and gas light. (1-2, 4-5, for Group I)

Figuring cost of lighting fixtures. (1-2, 4-5, for Group I; 1-5 for Group II; 1-2, 7-10, for Group III)

Comparison of cost of lighting in early times with cost today. (1-2, 4-5, for Group I; 1-2 for Groups II and III)

Fractions in charts, etc.

Necessary practice in arithmetic fundamentals was assigned from the regular arithmetic texts to supplement the arithmetic situations that the experiences of the unit presented.

### *Hand Skills and Related Arts*

Making notebook covers for story of light. (1-2)

Making block prints to illustrate story of light. (6-8)

Collecting various kinds of light for exhibit.

Making picture books from pictures collected on light.

Making wall charts. (3-5)

Reproducing in plasticine things seen at the museum, and expressing ideas gained from reading. (9-11)

Making candles.

Making fire sticks to learn how fires were lighted in early days.

Making health charts on care of eyes to present to health teacher. (3-5)

Making charts showing evolution of light. (3-5)

Making candlesticks.

Study of gas and electric meters.

Making electric lamps. (12-16)

Wiring lamps.

Studying static, electricity, and friction.

Making lamp shades. (17-19)

Demonstration by representatives of gas and electric company.

Exhibit of materials the grade had made and collected in developing the study of lighting.

*General Summary of Outcomes of Unit*

Increased interest, joy, and pride in own work and in the work of classmates.

Increased self-confidence, and higher standards of personal achievement.

Increased ability to do independent work.

Increased sensitiveness to social conduct.

Increased alertness in watching for useful material.

Ability to use newspaper more independently and to make simple report on what was read.

Greater effort to ask and answer questions in well-constructed sentences, so that meaning is conveyed.

Increased vocabulary.

Desire to learn new words needed in written work.

Ability to write invitations and short letter of thanks independently.

Increased appreciation of what letter-writing means.

Increased pride in penmanship.

Increased ability to solve accurately problems in arithmetic which arise.

Some consciousness of the economic problem that light has been in the past and is at the present time.

Increased skill in handling and using tools.

#### A UNIT ON COTTON CLOTH

The third unit to be reported here, a study of cotton cloth, was carried out in a class of adolescent girls, ages thirteen to sixteen years, mental ages eight, nine, and ten years. This unit illustrates how a teacher may definitely plan to stimulate interest in some particular field. The teacher in this case stimulated interest in the cotton materials with which the girls were working through a test on the recognition of cotton fabrics and a visit to a department store. These experiences created a desire for further knowledge and experience in connection with the subject of their interest. The unit also

illustrates how special-subject teachers may assist in carrying out a unit. In this instance the home economics teacher guided the planning and serving of a luncheon; the music and health teachers taught Southern songs and dances; a student art teacher guided the making of a book.

The activities listed on page 312 under the heading of health, in the outline of attainments in subject-matter groupings, indicate how a second unit, or an undertaking unrelated to the main unit, may be carried on along with the major unit. The girls working on this unit on cotton also assisted in a "Better Foods" drive throughout the school and carried out many activities in connection with this undertaking that had no bearing on their study of cotton.

## COTTON CLOTH

Unit of work developed with a girls' prevocational class.  
Chronological ages: 13 to 16 years.

### TEACHER'S PRELIMINARY ANALYSIS OF THE POSSIBILITIES IN THE UNIT

#### THE SETTING

The girls have used several different kinds of cotton cloth: muslin, gingham, percale, crêpe, cretonne, cambric, flaxon, and voile. Some of the girls have the following garments under way: voile dresses, cretonne smocks, crêpe nightdresses, and cambric slips. This type of sewing will continue through the spring term. In directing the girls' attention to the different kinds of materials in use, the following questions may arise: Are all these materials made from cotton? Why are there so many different kinds of cotton materials? Are there others we do not know about? How are these materials suited to different uses? What are the differences in cost and why are there these differences?

## ATTAINMENTS THAT MAY BE WORKED FOR

Attainments were outlined with a view to strengthening previous attainments as well as to achieving new ones.

*Habits and Attitudes Needed in Many of Life's Situations*

1. Courtesy, respect, and helpfulness.
2. Responsibility in carrying out simple duties.
3. Perseverance at a task until completed.
4. Independence in work.
5. Self-confidence.
6. Individual responsibility as to one's part in a group.
7. Good workmanship.

*Social Studies*

1. Appreciates the idea of interdependence of one group on another; for example, we need cotton and the Southern people grow it for us. Appreciates our dependence on railroads, dry-goods merchants, etc.
2. Knows something of the labor required in cotton growing and preparing.
3. Locates Southern regions on United States map.
4. Knows about the influence of climate on the raising of certain products; for example, that cotton needs a warm climate.
5. Discriminates cotton fiber from wool and silk.
6. Knows when cotton clothes are suitable.
7. Library habits
  - (a) Desires to use the library.
  - (b) Knows how to ask for help from the librarian.
  - (c) Knows how to look up a book by author and title.

*Literature*

1. Listens with increased interest to new stories and poems.
2. Enjoys telling, retelling, and hearing others tell or read favorite stories or poems.

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### *Tool Subjects*

Attainments in the tool subjects are outlined at two levels. Group I in this class comprised pupils of chronological ages from 14 to 16-6, including one girl of 13; Group II comprised pupils of from 15 to 16 years.

### *English*

#### GROUP I

1. Makes contributions to group discussion regarding planning and carrying out of experiences.
2. Speaks distinctly in a tone that will hold interest of others.
3. Answers questions directly in a sentence.
4. Recognizes and learns to use new words.
5. Shows increased poise in social situations involving
  - (a) Introducing people.
  - (b) Respect and conduct toward elders.
6. In reading, recognizes the paragraph by its form and can state its main idea.
7. Writes notes of thanks, invitations, short friendly letters of one paragraph of three or four related sentences.
8. Addresses envelopes.

#### GROUP II

1. Makes contributions to group discussions regarding planning and carrying out of experiences.
2. Speaks distinctly in a tone that will hold interest of others.
3. Answers questions directly in a sentence.
4. Recognizes and learns to use new words.
5. Shows increased poise in social situations involving
  - (a) Introducing people.
  - (b) Respect and conduct toward elders.
6. Shows increased ability in writing and directing
  - (a) Letters requesting information.
  - (b) Invitations.

### *Reading Habits and Skills*

#### GROUP I

1. Reads over silently first what is to be read orally.

#### GROUP II

1. Reads over silently first what is to be read orally.

- |  |   |
|--|---|
| 2. Enunciates clearly and distinctly in oral reading.  | 2. Enunciates clearly and distinctly in oral reading.                                   |
| 3. Reads silently without lip movement.  | 3. Reads silently without lip movement.   |
| 4. Asks and answers questions pertaining to material read.   | 4. Asks and answers questions pertaining to material read.                              |
| 5. Selects and reads parts of story that make greatest appeal.   | 5. Selects and reads parts of story that make greatest appeal.                          |
| 6. Uses table of contents in locating information.   | 6. Uses table of contents in locating information.                                      |
| 7. Reads titles of books.  | 7. Reads and follows directions.  |
| 8. Is interested in newspapers, knows where to find in them name of paper, weather report, want ads, advertisements, news items, theater news. | 8. Makes use of dictionary.   |
|  | 9. Reads newspapers independently and makes a very simple report on what has been read. |

*Writing and Spelling*

1. Maintains a healthful position.
2. Maintains good letter form, slant, and spacing in all writing situations.
3. Reaches standard of 6A grade or better on writing scale in local use.
4. Reaches standard of 70 on Ayres Gettysburg scale.
5. Masters basic words needed in written work.
6. Develops a spelling conscience—a desire to spell correctly in situations where spelling is necessary.

*Arithmetic*

## GROUP I

1. Knows how to solve accurately problems that arise calling for the use of one process or more.

## GROUP II

1. Knows how to solve problems that arise calling for the use of one process or more.

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2. Reviews how to add five-place numbers.
3. Reviews how to subtract five-place numbers with borrowing.
4. Reviews and drills division of even and uneven two-place dividends by one-place divisor.
5. Knows meaning of units of linear measure and makes simple applications.
6. Appreciates value of and is able to make change with real money to five dollars.
7. Knows how to multiply a four-place multiplicand by a three-place multiplier.
8. Knows how to divide a three-place dividend by a one-place divisor without carrying and without a remainder.
9. Knows how to check results for accuracy.
2. Knows how to use accurately facts and processes of the fundamental operations.
3. Knows meaning of and applies units of linear measure previously taught.
4. Appreciates the value of and is able to make change with real money to amount of ten dollars.
5. Understands simple fractional parts of a whole or group and solves simple addition, subtraction, and multiplication problems.
6. Knows how to check work for accuracy.

### *Hand Skills and Related Arts*

#### *Sewing, Weaving, Bookmaking*

1. Recognizes common cotton fabrics for problems at hand.
2. Appreciates suitable color harmony.
3. Cuts garment under supervision.
4. Fits garment under supervision.
5. Bastes correctly.
6. Folds and bastes a hem.

7. Makes French seams.
8. Shows skill in machine sewing in carrying out above.
9. Applies color harmony in planning a fabric and arranging colors.
10. Weaves on foot loom.
11. Makes Japanese sewed book.

### *Laundering*

12. Appreciates values of clean clothes.
13. Knows the principles of the best methods of laundering various articles.
14. Knows how to remove stains.
15. Knows how to iron various types of cotton garments.

### *Foods*

16. Knows about differences in foods and their preparation in colonial days and now.
17. Appreciates importance of thought and a plan of work in preparing food.
18. Realizes that an attractive table is important as well as good food.
19. Knows that too much of one kind of food makes an unbalanced meal and does not promote good health.

### PROBLEMS AND EXPERIENCES THAT MAY BE DEVELOPED

#### *Questions That May Be Raised*

Where is cotton grown ?

How is cotton planted and grown ?

What countries make cotton cloth ?

Have we any factories in Rochester ?

How is cotton prepared and made into different grades and kinds of cloth ?

What are the meanings of the different names for cotton cloths — print, percale, muslin, etc. ?

Why are the relative costs of different cotton materials what they are ?

How and when is cotton cloth used ?

How can we keep records of our plans and of what we learn ?



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### *Experiences That May Furnish Answers*

Trip by committee to branch or school library and to grades to get information for the class on how and where cotton is grown.

Write for cotton exhibit and pamphlet on cotton.

Plant cottonseed in room.

Study life of early Southern Negro.

(a) Read stories.

(b) Study Southern foods and prepare Southern menu at noon luncheon.

Gather information from library, supplementary readers, encyclopedias, etc., on the manufacture of cotton cloth.

Examine colors and patterns in the materials the girls are using.

Set up looms and weave patterns.

Make a trip to a local store to find out about the cotton cloths offered for sale.

Write letters asking permission to visit store.

Discuss problems of conduct and courtesy on the trip.

Discuss what to look for in the different kinds of material, etc.

Discuss the use we make of cotton in our homes and in our clothing, particularly in connection with articles being made by the girls.

Discuss proper care of cotton clothes and household articles — laundering.

Discuss relative values of homemade and readymade articles.

Bookmaking — Japanese sewed book to be used as a record of our plans and of what we discovered.

Charts.

Make garments.

### *Experiences Supplementary to the Unit That May Be Needed*

*Health.* Games, in schoolroom and gymnasium.

*Rhythm.* Dancing. Preparation of well-balanced noon lunches for teachers and girls.

*Science.* Study of time of year, length of days, change in temperature, life cycle of moth (cocoon in classroom).

*Arithmetic.* Necessary practice work to take care of attainments.

*Spelling.* Basic vocabulary lists — Commonwealth and Ayres — studied.

### BOOKS THAT MAY BE HELPFUL

BONSER, F. G., and MOSSMAN, L. C. *Industrial Arts for Elementary Schools.* The Macmillan Company, New York; 1923.

Lincoln School, Teachers College, Columbia University. *Curriculum Making in an Elementary School.* Ginn & Co., Boston; 1927.

RUGG, H. O., and SHUMAKER, ANN. *The Child-Centered School.* World Book Company, Yonkers-on-Hudson, New York; 1928.

EARLE, ALICE. *Home Life in Colonial Days.* The Macmillan Company, New York; 1898.

CHAMBERLAIN, J. F. *How We Are Clothed.* The Macmillan Company, New York; 1924.

CARPENTER, F. G. *How the World Is Clothed.* American Book Company, New York; 1908.

### TEACHER'S SUMMARY REPORT OF ACTUAL DEVELOPMENT OF THE UNIT

In order to direct the girls' attention to cotton cloth, ten pieces of different kinds of cotton material were placed on the table. Each piece was numbered. The girls were asked to make a written report on the kinds of material to see how many they already knew. After this test, we gathered around the table, talked about the materials, and examined them more closely. Many differences were noted in fineness, smoothness, firmness, color, etc. The girls examined their own dresses and named the materials they were made of.

Out of this situation grew a desire to know more about cotton cloth and to find out the why of some of the things they had discovered in examining the material. A trip was arranged to a local department store. The girls wrote for permission to visit the store and made an outline of the things they wished to learn about. As a result a specific

time was reserved for our visit. One of the buyers met us and conducted us through the retail department and through the storehouse. The girls were very much interested and much pleased by the courtesy shown to them. Four of them took notes. The following are a few excerpts from a report they wrote following their trip :

"Mr. L., one of the buyers, took us through one of the storerooms and showed us samples of muslin, duck, canvas, denim, awning materials, and tickings.

"Then we went into another room and saw several kinds of battings. The cheapest kind sold for around twenty cents a pound; the very best sold for a dollar and a half for two pounds. This best kind is made of cotton from China."

"We then examined many kinds of table oilcloth, the back of which is made of cotton. The oilcloth coating is made from earth from India and South America mixed with cottonseed oil."

"He told us that most of the mills that used to be in the New England states have been moved to the Southern states. The reason for this is that they are closer to the cottonfields, to a supply of coal, and to cheap labor. However, a few mills still remain in the New England states."

"Another interesting thing he told us about is that the pattern for printing materials is carved by hand on a copper roller which passes over the top of the materials and prints them with the different designs."

"Before the war most of our dyes came from Germany, but since the war we manufacture our own dyes from coal-tar products."

In answer to the question whether all cotton was grown in the South, one of the girls who had read parts of *Uncle Tom's Cabin* volunteered information on the slaves' picking cotton and told of some of the incidents in the book. Following the discussion of the cotton gin, one of the girls came to school the next morning with a book on the life of Eli Whitney which she had obtained at the public library. This led to reading and studying about Eli Whitney's life.

A discussion of Eli Whitney's stay in one of the Southern homes brought up the subject of Colonial homes and customs. As a result Southern life and the life of the slaves on the plantation were studied. Two of the outgrowths of this interest were candle-dipping and a Southern luncheon planned with the help of the home economics teacher.

Letters were written for an exhibit on cotton and for pamphlets about cotton. Cottonseeds from a cotton boll were picked and planted; they lived about a week.

Investigation of reading materials on the growth and manufacture of cotton provided limitless opportunities for reading and English.

As the girls needed undergarments and dresses, there were opportunities for learning the suitability and values of different kinds of materials. Handmade articles were brought to school from the store. There was a comparison of their values with those of machine-made articles and articles made by the girls. The home economics teacher also assisted in giving the girls practice and instruction in the proper laundering of cotton materials.

The small hand loom and large foot loom in the room gave opportunities for the understanding of different weaves and actual experimentation in weaving.

The unit throughout stimulated a variety of interests and gave ample opportunity for the development of the tool subjects, content subjects, and general habits and attitudes.

In addition to the increase in valuable habits, skills, and knowledge that the unit furthered is a large background of appreciation and understanding, which may be summed up as follows:

1. Greater appreciation of the economic value and usefulness of cotton fabrics.
2. Better judgment in determining cotton materials suitable for home and personal use.
3. Appreciation of the vast amount of work required in making even one yard of material.
4. Increased realization of the economic value of being able

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to make some of one's own clothing as well as household necessities.

5. Greater realization of the importance of inventions, such as the cotton gin, machinery used in textile mills, and that making possible the use of electric power, etc.
6. Realization of the importance of modern home conveniences as compared with those of Colonial days.
7. Some appreciation of the value of the leisure time that has developed because of labor-saving inventions.
8. Realization of how the life of people is told in their songs, poems, and stories.
9. Increased appreciation of the value of well-written letters to business firms.

### ACTIVITIES DEVELOPED AND ATTAINMENTS RESULTING FROM THEM

#### *Social Studies*

A review map lesson on location of the S. store, principal streets, etc.

Discussion of courtesy shown on trip by girls and by the buyer who talked to the group.

Use of library for books. (7)<sup>1</sup>

Study of Colonial homes.

(a) Interiors.

(b) Colonial life, dress, food. Life of slaves — selections from *Uncle Tom's Cabin*.

Cotton growing. (1-4)

(a) Location of Southern states.

(b) Climate of Southern states.

(c) Soil, moisture, light, and heat necessary for plant growth.

Preparation of cotton and manufacture into cloth. (1-5)

(a) Ginning, batting, spinning.

(b) Weaving, printing, dyeing.

<sup>1</sup> Italic numbers in parentheses indicate the attainments realized. Number designations used are those in the lists of attainments on pages 299 to 303. Where no groups are indicated, attainments are common to both groups in the class.

- (c) Eli Whitney and his invention.
  - (d) Different kinds of cotton materials, texture, weave, color, etc.
  - (e) Processes of dyeing and printing.
- Removal of cotton mills from New England states to the South — map study. (3)

### Music

Picture of Stephen Foster shown to class.

Made list of songs he wrote.

Checked choices to be learned.

Music teacher taught the songs selected: Old Folks at Home; Oh! Susanna; Old Black Joe; Carry Me Back to Old Virginny; Old Kentucky Home; Massa's in the Cold, Cold Ground.

Wrote life of Foster for unit booklets. (*Literature 1-2*)

### Tool Subjects

#### *English, Writing, and Spelling*

Oral discussion. (*English 1-5*)

- (a) Examining materials.
- (b) Planning trip to store.
- (c) (See outline for social studies for other topics.)

Outlining and writing reports. (*English 1-4*)

- (a) Trip to store.
- (b) Life of Eli Whitney.
- (c) Life of Stephen Foster.
- (d) Laundry lesson.

Planning a Southern luncheon. (*English 1-2, 4-5 a, 6 b*)

- (a) Consulting books, magazines, friends, for information.
- (b) Forming committees.
- (c) Sending invitations.

Writing letters. (*English 6-8, Spelling 5-6*)

- (a) Request to visit the S. store.
- (b) Letter of thanks to store.
- (c) Request for cotton exhibit.
- (d) Request to Government Printing Office for information on cotton.

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Recipes copied for recipe books. (*Writing 1-4*)

Learned words needed in letters and reports (*Spelling 5-6*)

appreciate	hire	pleased
box	information	pleasure
buy	kind	price
calico	kindly	report
climate	knit	sending
cotton	leaves	shipped
day	like	sheet
country	letter	show
deal	loss	shrink
duty	may	sincerely
dye	material	steal
early	money	steam
enclose	need	thank
enclosing	nice	thread
entire	paid	towel
factory	past	washed
feed	pick	warm
field	place	writing
handkerchief	please	yesterday

### *Reading*

*The Clothes We Wear*, by F. G. and F. Carpenter (American Book Company, New York; 1926), "In the Land of Cotton," pages 9-16; "We Visit the Gins," pages 17-19; "A Visit to a Cotton Mill," pages 20-24. (1-3, 6, for Group I; 1-4 for Group II)

*Best Stories*, Third Reader in the Child's Own Way series, by Marjorie Hardy (Wheeler Publishing Company, Chicago; 1927).

*A Geography for Beginners*, by E. P. Shepherd (Rand, McNally & Co., Chicago; 1927-1930). (1-3, 6, for Group I; 1-4 for Group II)

Selections from *Uncle Tom's Cabin*. (4-5 for Group I; 4-7 for Group II)

Excerpts from pamphlets on printing and dyeing.

Use of library by girls. (7)

*Arithmetic*

Application of linear measure to height of girls; materials by yard; reduction of inches to yards and of feet to yards; fractional parts of inch, foot, yard, reviewed and applied; buying and selling materials by the yard where girls measured material and found cost.

Comparative costs and values of materials.

Adapting recipes for number of people to be served at Southern luncheon required use of measure equivalents, addition and multiplication of fractions. Dry measure reviewed and used in buying food for luncheon. Several trips made to different markets; prices compared; best food for the money purchased; table covers, candles, favors, purchased. Account kept of purchases made. Cost of luncheon totaled. Division (long and short) used and drilled on. Found average cost of food. (1-6)

*Hand Skills and Related Arts*

Articles made: dresses, 5; smocks, 2; aprons, 4; night-gowns, 2; holders, 2; slip, 1; purse, 1. (1-9)

Recipe books were made for new recipes used during unit. Invitations for luncheons made.

Handwoven articles brought in and examined.

Chenille rugs woven on foot loom.

Cretonne-covered books were made for reports on unit (under direction of student art teacher). Lining the covers introduced a lesson on dyeing and waxing. (11)

Class together made one large book on cotton, collecting pictures from many sources.

A study of comparative values of different cloths and of readymade and handmade articles (*Social studies* 1-2, 6)

*Home Economics*

These activities were carried out under the direction of the home economics teacher.

Southern luncheon: planning, marketing, preparing, serving.



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Study of food values. Meals of Colonial days not so well balanced as regular daily lunches girls prepare for themselves and teachers. (16-19)

Laundering of cotton materials: setting of colors; hard and soft water — water softeners, soaps; removal of stains; preparation of Javelle water; starches; hanging clothes; sprinkling, folding, ironing. (12-15)

Candle-dipping: finding out about process in Colonial days; making and dipping candles.

Twice a week the girls prepared the regular noon luncheon for the teachers and themselves.

*Health.* (The work in health indicates how a piece of work unrelated to the unit may be carried out along with the unit.)

Drive for better foods throughout the school.

Per cent of pupils in each grade taking milk posted daily on bulletin board. Vitamins in milk listed, and what milk does for us.

Healthy, the clown, visited school. Songs learned and sung for Healthy. Clown dance given by girls.

"Better foods" stressed through study of properly balanced meals, related to noon lunches, related to food values in the Southern luncheon prepared. Definition of calories, and number required per day. What foods do for our bodies.

Balanced meals worked out and checked. Model breakfast and model lunch on exhibit. Two girls selected to talk to other grades about the model meals on exhibit. Told vitamins each contained.

Health teacher taught the Virginia reel, Dixie, minuet (related to unit).

Cocoon came out. Group studied life cycle of the Cecropia moth.

### ADDITIONAL REFERENCES FOUND HELPFUL

#### PAMPHLETS

*Cotton Fabrics and Their Uses.* Textile Division, Department of Commerce, Washington, D. C.

*Oil Cloth*, by Edward F. Roberts. The Standard Textile Products Company, 320 Broadway, New York.

*Practical Home Economics*, Vol. VII, No. 10; and Vol. VIII, No. 2. Lakeside Publishing Company, New York.

*Qualities of Cotton*, by George A. Sloan. Cotton Textile Institute, 320 Broadway, New York.

*Sea Island Cotton* (Farmers' Bulletin No. 302), by W. A. Orton. United States Department of Agriculture, Washington, D. C.

*The Selection and Conservation of Textiles*. Department of Research, Laundry Owners National Association, Home Laundry, Rochester, New York.

*Woman's Home Companion*, for December, 1929.

## BOOKS

DENNY, GRACE G. *Fabrics and How to Know Them*. J. B. Lippincott Company, Philadelphia; 1926.

DOOLEY, WILLIAM H. *Textiles*. D. C. Heath & Co., Boston; 1924.

DYER, ELIZABETH. *Textile Fabrics*. Houghton Mifflin Company, Boston; 1927.

MCGOWAN, ELLEN B., and WAITE, C. A. *Textiles and Clothing*. The Macmillan Company, New York; 1919.

WILKINSON, FREDERICK. *The Story of the Cotton Plant*. D. Appleton-Century Company, Inc., New York; 1899.

## QUESTIONS AND SUGGESTIONS FOR STUDY

1. Apply to any one of the three units outlined in this chapter the criteria suggested earlier for the selection of units.
2. What advantages are derived from planning a unit in as detailed a manner as the units in this chapter were planned? Can you suggest an improved plan?
3. Choose one of the three units:
  - (a) Study attainment groupings and discuss what they tell you about the organization of the class.
  - (b) Choose and discuss five situations where personality habits were developed or strengthened.
  - (c) Discuss deviations from the preliminary plan.
4. Contrast the units on music and on cotton cloth as to ages of children, activity, and content.
5. Could a unit on lighting be used in a mixed class of boys and girls? Suggest adaptations that might need to be made.

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6. Do any special-subject teachers teach your class? How can they co-operate with you in a unit program?
7. What are some of the difficulties the teacher would have encountered if she had attempted to follow a formal, timed program in developing any one of these units?
8. List for each unit all the experiences you would classify as (a) first-hand, (b) experiences of expression.
9. Name the experiences these three classes had that undoubtedly gained for them increased respect and admiration from the rest of the school.
10. How does the development of the unit in music illustrate the fact that it is advisable for the successful teacher to be able to have some choice in the selection of units for her class?

### READING REFERENCES

See the list of reading references on pages 329-333, following Chapter XV.

## *Chapter Fifteen*

### SUGGESTED UNITS FOR DIFFERENT AGE LEVELS

THIS chapter will suggest briefly units of work that are suitable for different age groups of the mentally retarded. The newer curriculums for regular grades consist of units for each grade, based on the interests and abilities of children. In the majority of the curriculums the units center in the social studies. Such a plan of units for each grade prevents the repetition that often occurs where there is no such plan. In the Lincoln School of Teachers College, one of the earliest experimental centers for unit development, careful records of the work of each class were kept and passed on with the group. In this way every teacher was able to find out what each group of children coming to her had already experienced.

Where children are in one special class longer than a year and where they pass on to other classes at irregular intervals, repetition in units may very easily occur. Such repetition of a unit for individuals in a special class is not in itself undesirable if it does not occur too soon after the original experience, and if it allows for larger experiences and more learnings than did the original experience.

If the unit develops from the needs and the interests of the group instead of from a prescribed unalterable plan, it will never be developed twice in the same way. So repetition of the unit can never mean an exact duplication of experience. A plan for a series of units is desirable, however, to provide that the experience of pupils with units may be varied and may

show a planned progression in the opportunities for growth.<sup>1</sup>

There is a certain progression suggested in the following series of units, beginning with those centering about home and family life and reaching out in an ever widening circle from there to subjects involving broader social concepts. The number of units suggests opportunity for variety in a unit program. Where a teacher does not follow a prescribed curriculum, she might well make a tentative selection of units from the following lists.

These would of course be chosen with thoughtful consideration for the abilities of the group and their experiences of previous terms. Where there is more than one special class in a system, the teachers of those classes might co-operate in selecting and planning units suitable to their respective groups. Occasional conferences on the success and progress of the units would enable the teachers to judge of the suitability of their choices and of the children's attainments. As a result of such procedure, a tentative curriculum could be developed suited to the respective abilities within classes and to the locality.

<sup>1</sup> In planning the special-class curriculum in Rochester, units are being tried out from the fields of social studies, health, and science. In order that these units may be as varied and as definitely progressive as possible, four progressive sets of units are being tried out for primary and intermediate classes of boys and girls in which the chronological-age ranges are 7-0 through 12-0 or 13-0 years, and four progressive sets of units are being devised and tried out for boys' classes and for girls' classes in which the chronological-age ranges are from 12-6 or 13-0 to 16-0 years of age. Each set of units covers a year's work and can be adapted to the varying interests and age levels in the class. There is also provision for the development of units that may be inspired by unforeseen circumstances. The series of units are so planned that the same fundamental observations and concepts will recur many times. They are paired for age groups and designated for odd and even years, so that a child remaining in one group for longer than a year will not repeat the same units and carry on the same activities. The attainments are at all times cumulative and progressive for the individual child.

Lists are suggested here of units for two age groups, one of eight to twelve or thirteen years, and one of twelve or thirteen to sixteen years.

Units suggested for children of the younger group are ones in which opportunity should be plentiful for the child to experience actual "doing" in relation to familiar situations in his environment and thereby better understand, express, and conduct himself in relation to that environment. The amount of time given to the development of a unit for this younger group may range anywhere from two to six weeks.

#### UNITS FOR CHILDREN FROM EIGHT TO TWELVE OR THIRTEEN YEARS

The following titles suggest units of work that may be effective with children eight to twelve or thirteen years old, with mental ages of six, seven, or eight years.

UNITS OF HOME AND FAMILY LIFE (The units in this classification would be best suited to children at the lower level of the age group suggested or slightly below it — perhaps from seven to ten or eleven years.)

- My Family
- The Doll's House
- The Play House
- Our Kitchen
- Our Toys and Games

#### COMMUNITY OR NEIGHBORHOOD UNITS

- A Neighborhood Street
- A Neighborhood Corner
- The Playground
- The Grocery
- The Post Office
- The Library
- The Bookshop
- The Toyshop

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- The Theater
- The Firehouse
- The Drugstore
- The Circus

### UNITS ABOUT OUR CITY

- A Downtown Street
- The City's Helpers
- The Warehouse at the Railroad

### FOOD UNITS (Health)

- The Farm
- The Dairy
- Milk
- The Public Market
- The Poultry Show
- The Bakery
- The Pure-Food Show
- The Cafeteria
- The Market
- The Grocery
- The Huckster

### TRAVEL UNITS

- Travel in Our Neighborhood
- The Street Car
- The Auto Bus
- Boats
- Our Passenger Airplane
- The Mail Plane
- The Railroad Station
- The Express
- Freight Cars

### SHELTER UNITS

- A Street of Houses
- The Building of a House
- The Apartment House
- The Furniture Exhibit
- A Japanese House

An Eskimo House  
An Indian Adobe House

CLOTHING UNITS

The Dry Goods Store  
The Clothing Shop  
The Laundry  
Wool <sup>1</sup>  
Cotton <sup>1</sup>

SCIENCE AND NATURE UNITS

Birds  
Fishing  
The Spider  
Our Class Pet — The Rabbit  
The Squirrels  
Our Class Garden  
Seeds in Autumn  
Winter Is Coming  
Spring Is Here

UNITS ON LIFE IN OTHER COUNTRIES

Indian Children  
Children of Japan  
Children of Holland  
Eskimo Children

Detailed outline of two of the units suggested in this list are given herewith to illustrate a plan by which units may be set up to provide a rounded curriculum. These outlines are intended merely to suggest possibilities, not to prescribe definitely what experiences shall be undertaken, what form or order these experiences shall take, or how they shall be developed. Nor could any one group of children be expected to follow all the suggestions made. They are made merely to indicate problems of possible interest to children and experiences

<sup>1</sup> These units are recommended only if the environment is such that raw material may be observed in process of growth or manufacture.



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that might develop from them if interest is sufficient to encourage their development.

### THE RAILROAD STATION

#### SUGGESTED QUESTIONS AND PROBLEMS

Question that may arise before a visit: What shall we see at the railroad station? Possibilities that may be discussed: trains, people with bags, people buying tickets, people waiting for trains, the trainman calling trains, the station clerk, the restaurant.

Questions that may arise following the visit: How shall we build a railroad station? What shall we put in it? Can we make a station clock? Can we make timetables? Where does the railroad take the people?

#### EXPERIENCES

Approach to experiences through reading to children stories and poems about trains; displaying train pictures for children to look at and talk about; discussing how a new boy came by train to the city.

Visiting a railroad station. Planning the trip. Deciding what to look for.

Discussing after the trip where people go on trains, passenger cars, buying tickets, timetables, waiting room, baggage room, ticket office.

Taking a trip to a near-by town by train, if possible.

Looking at slides and stereoscopes of trains and travel.

Building a station, waiting room, and ticket office (large enough to play in). Making tickets, train schedules, and appropriate signs.

Laying out on schoolroom floor a plan of waiting room, ticket office, restaurant, freight sheds, tracks, baggage room.

Making a station clock. Learning to tell time.

Making lists of names of near-by towns and cities. Making timetables.

Drawing on floor "play" routes 'from home town to near-by places. Taking a journey in play.

POSSIBLE OUTCOMES<sup>1</sup>

Knows about railway stations and their activities.

Realizes how many people work in the station and something about the duties of each.

Realizes that they serve many people and must be neat and clean and courteous.

Knows that trains come and go at stated times.

Knows that many people depend on train service.

Knows about distance in relation to time, how long it takes trains to travel to certain near-by places and to places far away.

Realizes that trains carry goods as well as people.

Realizes that signs are important for what they tell us.

Increases vocabulary: station, platform, timetable, schedule, and so forth.

BOOKS THAT MAY BE HELPFUL

REFERENCES FOR CHILDREN'S READING

KUH, CHARLOTTE. *Engineer*. The Macmillan Company, New York; 1929.

READ, HELEN S. *An Engine's Story*. Charles Scribner's Sons, New York; 1928.

SWIFT, HILDEGARDE HOYT. *Little Blacknose*. Harcourt, Brace & Co., Inc., New York; 1929.

SMITH, ELINOR BOYD. *The Railroad Book*. Houghton Mifflin Company, Boston; 1913.

TIPPETT, JAMES S. *I Go A-Traveling*. Harper & Brothers, New York; 1929.

BOOKS FROM WHICH TO READ TO THE CHILDREN

BEEBY, D. J. and D. *How the World Grows Smaller*. Charles E. Merrill Company, New York; 1924.

*Book of Knowledge*. Grolier Club, New York.

CHAMBERLAIN, J. F. *How We Travel*. The Macmillan Company, New York; 1928.

CURTIS, N. C. *Boats*. Rand, McNally & Co., Chicago; 1928.

FOX, FLORENCE C. *How the World Rides*. Charles Scribner's Sons, New York; 1929.

MEIGS, C. *The Wonderful Locomotive*. The Macmillan Company, New York; 1928.

<sup>1</sup> Outcomes stated are only those in the social studies. Other outcomes may be expected in reading, English, number, etc.

SEEDS IN AUTUMN

QUESTIONS FOR OBSERVATION

How many different kinds of seeds can we find growing in the schoolyard?

How are the seeds of weeds planted?

How are garden seeds planted?

How are seeds of one plant different from those of others?

Why do some seeds have tiny hooks? some, wings? some, sails?

Where do we find the seeds of fruit trees? of nut trees?

What happens when a seed is planted in the fall? in the spring?

Do all seeds sprout the same way?

EXPERIENCES

Hunting in schoolyard or neighborhood for different kinds of seeds.

Going to the park to pick up different kinds of pine cones. Hunting for the seeds hidden under the cone scales.

Bringing ripe apples, peaches, pears, to school. Cutting into the cores to study the seed arrangement of each.

Soaking a few beans in warm water. Splitting in two to see the tiny new plant within.

Placing a few seeds of beans, peas, nasturtiums, or other plants on moist cotton or blotting paper and observing their sprouting.

Planting a few seeds (grapefruit, apple, horse-chestnut, nasturtium, bean, corn) in the window box or in individual flowerpots and observing the growing plants. Marking the place where each seed is planted. Noting differences in length of time to sprout, to bear seeds, etc.

Making a collection of, and classifying and labeling, as many different kinds of seeds as possible: i.e., "Seeds We Eat," "Nut Seeds," "Fruit Seeds," "Seeds That Sail through the Air," etc.

Making a booklet, "What I Have Learned about Seeds."

Looking for pictures of trees and their seedlings in the encyclopedia.

Reading from the science reader *By the Roadside*, by Fannie W. Dunn and Eleanor Troxwell, pages 22, 233-244.

Collecting seed pods from weeds for decorative purposes.

Making blueprints and spatter pictures of seed pods.

#### PROBABLE OUTCOMES IN SCIENCE

Has an increased interest in plants and their seeds — in looking for them, watching them sprout, etc.

Can recognize several different kinds of seeds.

Has a generally good idea of the cycle of life of a plant.

Appreciates beauty in common things.

Realizes the value of nut seeds and some vegetable seeds as food.

#### REFERENCES FOR THE TEACHER

BURGESS, THORNTON W. *The Burgess Flower Book for Children*. Little, Brown & Co., Boston; 1923.

COMSTOCK, ANNA B. *Handbook of Nature*. William T. Comstock Company, Ithaca, New York.

DU PUY, WILLIAM A. *Our Plant Friends and Foes*. John C. Winston Company, Philadelphia; 1930.

#### UNITS FOR CHILDREN FROM TWELVE OR THIRTEEN TO SIXTEEN YEARS

Units chosen for children twelve or thirteen to sixteen years of age should give these children a better idea of the work of the world in their own locality and in other places, of how goods are produced and shipped, of how man provides himself with food, shelter, and clothing, of the practical arts of home life, of the city as a group of people living and working together, of vocational opportunities, and of inventions and improvements that make life different today from what it was long ago. Units for all age groups, but for this group

especially, should also make more intelligible to the child what he sees and hears around him on the street, at the movies, on the radio, and in the newspaper as he tries to identify himself with life's activities. There never was a day when so many stimuli were coming to all children, outside as well as inside school. Units should help make these stimuli as intelligible as possible.

It will be noted that the units suggested for adolescents are broader in scope and are more informational in content than those for the younger children. Any one of them will include several different phases of an interest. In this respect they contrast with the primary units, which for the most part tend each to develop one major enterprise that lends itself chiefly to construction and play. Because in many city systems the boys and girls are segregated in classes at adolescence, some of the units are designated as for boys or girls. Difference in vocational interest of the two sexes suggests the advisability of their developing different units occasionally even where they work in the same classroom. Many of the units centering around the home may be profitably entered into by both boys and girls.

The following titles are intended to suggest units of work that may be developed with children of chronological ages of from twelve or thirteen to sixteen years, and of mental ages of eight, nine, or ten years.

#### CLOTHING UNITS

Silk Cloth

Cotton Cloth

Woolen Cloth

Linen Cloth

Rayon

Keeping Clothes Clean

Our City, a Center for the \_\_\_\_ Industry

My Summer Clothes (*for girls*)

Winter Clothes for the Family (*for girls*)

**SHELTER UNITS**

Houses and How to Build Them

The Cement Industry (*for boys*)

The Brick Industry (*for boys*)

Lumber (*for boys*)

The Forests of Our State (Some other natural resource  
may be substituted here.)

Heating Our Homes

Lighting Our Homes — History of Lighting

Planning for a New Home

Indian Homes

Homes of the Early White Settlers in Our City

Homes in Other Lands

**UNITS OF HOME LIFE**

Decorating and Furnishing a Room (Problems worked  
out in a practice house will be carried over to the home.)

Fixing Up My Bedroom

The Kitchen

The Family's Meals

Clothes for the Family

The Family's Recreation

Child Care

The Family Budget

The Family's Health

Entertaining at Home

**FOOD UNITS (Health)**

Fruits and Vegetables

Food Preservation

Milk and Its Products

The Story of Wheat

The Story of Sugar

Meat

The Salmon Fisheries

Oysters and Clams

Poultry

Foods Grown in Our State

Farming in the United States

Foods of Other Lands

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### UNITS OF CITY LIFE

- Downtown
- The Fire Department
- The Police Department
- Postal Service
- The City's Housekeeping
- The City Parks
- Banking and Thrift
- The Health Bureau and the Hospitals
- Industries
- Transportation of Goods into and out of the City
- Early History of Our City
- How the City Manages Its Affairs

### TRAVEL UNITS

- History of Transportation and Travel
- A Travel Trip through Our State
- United States Highways
- Travel in Other Countries
- Main Highways in the World — Motor, Rail, Water, Air

### COMMUNICATION UNITS

- The Newspaper
- The Telephone
- The Telegraph
- Wireless
- The Radio
- The History of Communication

### UNITS ABOUT OTHER COUNTRIES

- Japan
- China

### UNITS ABOUT GREAT MEN AND WOMEN

- The Story of Florence Nightingale (*for girls*)
- The Story of Helen Keller (*for girls*)
- Stories of Discovery: Columbus, Magellan
- The Story of Benjamin Franklin

The Story of Abraham Lincoln  
The Story of George Washington

RELATED GROUPS OF SHOP UNITS (*for boys*)

Leather  
The Shoe Industry

Brooms and Brushes  
The Brush-Making Industry

The Mining and Preparation of Metals<sup>1</sup>  
The Sheet-Metal Industry

The History of Records<sup>1</sup>  
The Paper Industry  
The Preparation of Inks  
Bookmaking  
The Printing Trade

The History of the Auto  
The Story of Metals  
The Auto Industry

The Lumber Industry  
Furniture and Cabinetmaking  
Keeping the Home in Repair

SCIENCE UNITS

Air Pressure  
The Air and Sound  
Water and the Soil  
Bacterias, Yeast, and Molds  
Sinking and Floating  
The Mariner's Compass  
The Weather  
Photography  
Radiant Heat and Light

<sup>1</sup> Units in this group are recommended for only the most capable boys.



### QUESTIONS AND SUGGESTIONS FOR STUDY

1. Discuss reasons why and ways in which repeating a unit of study after a lapse of two years might be a very dull procedure. Discuss how it may be made interesting, stimulating, and profitable.
2. Why is a curriculum plan for units desirable and necessary?
3. Suggest units in the field of health in addition to those given in this chapter.
4. Choose one of the units suggested and make a tentative plan for a special class, ages 9 to 12 years; for a special class, ages 12 to 15 years.
5. Would segregated classes for boys and girls, ages 13 to 16 years, have any advantages over mixed classes for carrying out a curriculum based on units? Discuss your answer.
6. Select units that you think would be best suited to mixed groups of boys and girls ranging in age from 9 to 15 years.
7. Choose three units suitable to your class. Make a bibliography that would help you in planning and in carrying out each unit.
8. Make a plan for a study of the early history of the community in which your school is located. Where will you find source materials? What kinds of trips can you plan to give meaning and reality to the facts that will be studied?
9. Suggest ways of developing interests in natural science in a special class of boys, ages 12 to 16 years, selected from a formal city school in which the boys had received no instruction in science.
10. Discuss some activities possible in a unit on leather that would appeal to the slow-learning adolescent boy.

## READING REFERENCES

(For Chapters XI to XV)

## THE UNIT PLAN

The following publications in their entirety develop the "activity" or "unit" plan of teaching. They explain its underlying principles and suggest or describe "units" in detail.

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2. COLLINGS, ELLSWORTH. *An Experiment with a Project Curriculum*. The Macmillan Company, New York; 1923.
3. *Community Life Studies for Primary Grades*. Department of Education, Seattle, Washington; 1931.
4. Course of Study in Special Education for Retarded Children. Public Schools, Minneapolis, Minnesota; 1932-1933.
5. *Curriculum Making in an Elementary School*. Ginn & Co., Boston; 1927.
6. DUNN, FANNIE W., and BATHURST, E. G. *Social Studies for Rural Schools: A Tentative Three-Year Plan for Combining Classes*. Department of Rural Education and Institute of School Experimentation, Teachers College, Columbia University, New York; 1932.  
*Homes in Early Times and Now*. One year's work for intermediate grades.  
*How the World Gets Food*. One year's work for intermediate grades.  
*Agriculture in World Civilization*. One year's work for upper grades.  
*Our Changing World*. One year's work for upper grades.
7. *Handbook in Social Studies and Related Activities for Primary Teachers*. Department of Public Instruction, Trenton, New Jersey; 1932.
8. LANE, ROBERT. *A Teacher's Guide Book to the Activity Program*. The Macmillan Company, New York; 1932.
9. MARTENS, ELISE H. *Group Activities for Mentally Retarded Children — A Symposium* (Bulletin No. 7). Government Printing Office, Washington, D. C.; 1933.
10. MEAD, CYRUS D., and ORTH, FRED W. *The Transitional Public School*. The Macmillan Company, New York; 1934.
11. MELVIN, A GORDON. *The Technique of Progressive Teaching*. John Day Company, Inc., New York; 1932.
12. PORTER, MARTHA PECK. *The Teacher in the New School*. World Book Company, Yonkers-on-Hudson, New York; 1930.
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14. RUGG, HAROLD, and SHUMAKER, ANN. *The Child-Centered School*. World Book Company, Yonkers-on-Hudson, New York; 1928.

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15. *Social Studies in the Public Schools of Ann Arbor, Michigan.* O. W. Haisley, Superintendent of Schools, Ann Arbor; 1929.
16. STEVENS, MARION P. *The Activities Curriculum in the Primary Grades.* D. C. Heath & Co., Boston; 1931.
17. STORM, GRACE E. *The Social Studies in the Primary Grades.* Lyons and Carnahan, Chicago; 1931.
18. *Teachers' Guide to Child Development.* California State Department of Education, Sacramento; 1930.
19. WADDELL, C. W.; SEEDS, C. A.; and WHITE, N. *Major Units in the Social Studies for Intermediate Grades.* John Day Company, Inc., New York; 1932.
20. WRIGHT, LULU E. *A First Grade at Work: A Non-Reading Curriculum.* Bureau of Publications, Teachers College, Columbia University, New York; 1932.

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21. *Bibliography for Activity Units* (Informal Teaching Series, Circular 1). University of the State of New York Press, Albany; 1934.
22. CAREY, ALICE E.; HANNA, PAUL R.; and MERIAM, JUNIUS L. *Catalog of Units of Work, Activities, Projects, Themes, Etc., to 1932.* Bureau of Publications, Teachers College, Columbia University, New York.
23. MCCALL, WILLIAM A. (Ed.) *Teachers' Lesson Unit Series.* Bureau of Publications, Teachers College, Columbia University, New York.
24. See References 15, 17, 18.

### EXCURSIONS OR COMMUNITY TRIPS

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26. PARKER, BERYL. *Studies of Environment.* Bulletin of Association for Childhood Education, Washington, D. C.; 1931.
27. See Reference 2, pages 50 ff.
28. See Reference 16, pages 207-218.
29. See Reference 18, pages 76 ff., page 148.

### THE SCHOOL ENVIRONMENT

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32. MOORE, ANNIE E. *The Primary School*, pages 1-13, 311-334. Houghton Mifflin Company, Boston; 1925.
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## RECORDS

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37. "Records and Reports," *Childhood Education*, Vol. 5 (January 1932).
38. See Reference 16, pages 84-99.
39. See Reference 18, pages 443-447.

## OBJECTIVE TESTS

40. *Manual of Local Construction and Uses of Objective Tests* (Bulletin No. 893). University of State of New York Press, Albany.
41. ORLEANS, J. S., and SEALY, G. A. *Objective Tests*. World Book Company, Yonkers-on-Hudson, New York, 1928.
42. RUSSELL, CHARLES. *Classroom Tests: A handbook on the construction and uses of non-standard tests for the classroom teacher*. Ginn & Co., Boston, 1926.
43. TIEGS, ERNEST W. *Tests and Measurements for Teachers*. Houghton Mifflin Company, Boston; 1931.

## THE PROGRAM

44. See Reference 32, pages 14-42.
45. See Reference 12, pages 55-57.
46. See Reference 14, pages 68-90.
47. See Reference 15, pages 29-33.
48. See Reference 18, pages 345-381.
49. See Reference 11, pages 137-157.

## INDUSTRIAL ARTS

### GENERAL

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51. — and MOSSMAN, L. C. *Industrial Arts for Elementary Schools*. The Macmillan Company, New York; 1923.
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53. FRIESE, JOHN F. *Exploring the Manual Arts*. D. Appleton-Century Company, Inc., New York; 1926.

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61. WINCHELL, CORA M. *Home Economics for Public School Administrators*. Bureau of Publications, Teachers College, Columbia University, New York; 1931.
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 Pictures, study materials, and books are listed under unit headings.

### SPECIFIC

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67. PLIMPTON, EDNA. *Your Workshop: A Book for Boys and Girls*. The Macmillan Company, New York, 1926.
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73. WORST, EDWARD P. *Coping Saw Work*. Bruce Publishing Company, Milwaukee, Wisconsin; 1927.

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#### VISUAL MATERIAL

The teacher should write for further aids from her state university, state department of education, and nearest museum.

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# *Chapter Sixteen*

## THE ACQUIREMENT OF THE TOOL SUBJECTS

THE experiences of a unit may often be so planned as to develop knowledge and skill in the tool subjects, as has already been suggested. The idea too has been expressed that if pupils are to attain a satisfactory degree of mastery of these subjects, definite periods must be set aside for their development and practice. The importance of this second fact must be thoroughly sensed by teachers of slow-learning groups.

In contrast to the normal child, who at twelve years of age has at his command the educational tools essential to the pursuit of other less elementary subjects and activities, the mentally retarded child must throughout his entire school life strive for this command. And any degree of achievement in the school subjects that these children reach is much more dependent on the learning situations provided by the teacher than is the achievement of normal children. It is important, therefore, that teachers of mentally retarded children of any age be familiar with the psychology of and research in the teaching of the fundamental tool subjects and with the best methods that have been developed on the basis of these. There will not be space in this book to go into these matters in detail, but some brief discussion of reading, English — including writing and spelling — and number will be given, with applications to the needs and abilities of the slow-learning child. For further study of this general subject, the teacher may have recourse to the materials listed at the end of this chapter.

## READING

Reading is bound to be a vital part of the life experience of every child — the slow-learning as well as the normal. Both types of reading — reading for pleasure and reading for the acquiring of information — will play an important part in the child's life. Slow-learning children must accordingly be helped to whatever mastery of this tool they are capable of attaining.

It seems agreed that children should not begin reading before at least a mental age of six years. There will be individual cases where even experiences must first be developed to provide an adequate background for reading or where attitudes unfavorable to learning should be changed before reading instruction is begun. Many times the child may need his background of experiences much extended before he has the interests or the vocabulary essential to a satisfactory beginning of reading. In these cases the teacher must first plan many activities that will involve such experiences before any real reading instruction is begun.

Pupil attitudes toward reading must also often be changed before the child is ready to begin any real practice in reading, for the majority of mentally retarded pupils have already attempted and failed in reading before their entrance to the special class. This failure has, in fact, in most instances given the clue to their need for a special school program. The consequence of this situation is often an attitude of fear and discouragement or boredom toward the whole subject of reading that will militate against really effective learning. The teacher who must take these children after a history of failures consequently faces a task of changing their attitudes of fear and distaste into ones of positive pleasure and confidence.



This situation may have been aggravated in some instances by the ambition of parents and pupils alike for the acquirement of reading ability. The general demand for reading instruction has resulted many times in children's attempting to learn to read before their mental development or background of experience is adequate for such a step. No small part of the teacher's task accordingly is to convince parents of the importance of mental readiness and suitable background of experience as elements in success in beginning reading.

*Interest and success in reading.* One of the teacher's first tasks in connection with the teaching of reading is that of developing toward the subject attitudes conducive to purposeful effort. As has already been suggested, this task is frequently complicated in the case of special-class children by histories of failure. The teacher must therefore make special efforts to develop interest in the subject. Gates' discussion of the element of interest in reading<sup>1</sup> has particular application to her problem.

Interest usually depended upon achievement. If the pupil's efforts were successful, his interest persisted or increased; if his efforts led to failure, his interest died or turned to distaste. There was no evidence that interest was the cause of the pupil's attainments; on the contrary, it appears that the degree of interest was the result of achievement. Similarly, we may expect to find at later stages a correlation between ability and interest in reading. In the main, the good readers will like the activity, the poor ones may often dislike it. In most cases, therefore, we should not say that the pupils failed because they were not interested in reading but that they probably had no interest because they failed.

<sup>1</sup> Arthur J. Gates, *The Improvement of Reading*, pages 23-24 (The Macmillan Company, New York; 1927).

In general, in dealing with difficulties in reading we must attack the difficulty in learning as a means of reviving interest rather than attempt primarily to cultivate interest as a means of removing the difficulties.

These conclusions are significant for the special-class teacher as they indicate that no matter how carefully the reading program may be planned to attract and to hold interest, it will not interest if the child does not develop the power to acquire word images and to derive meaning from the printed page. Often teachers will develop reading stories based on the child's experience or on something he is familiar with and really interested in — only to find that there is no reading interest in the stories and no improvement in ability resulting from practice with them because of the pupil's failure to acquire word images and to feel success in that acquirement. If the teacher is to arouse whole-hearted interest and purposeful efforts on the part of her pupils, she must therefore find out any difficulties that stand in the way of this achievement and provide a method that will overcome them. If success is to be a real factor in creating and holding his interest, the child must be able to recognize it. There should be some plan whereby he can watch and rate his reading progress.<sup>1</sup>

*Capacity for reading.* Reference has already been made to the fact that children should not begin reading before they reach a mental age of at least six years.<sup>2</sup>

<sup>1</sup> The records outlined on pages 241–245 will suggest a means of supplying this need.

<sup>2</sup> The California State Department of Education has accepted a mental age of 6 years 4 months as a standard minimum for beginning reading, on the basis of an extended three-year experiment in the reduction of failure in the first grade. See pages 163–164 of the Fourth Yearbook of the Division of Psychology and Educational Research of the Board of Education, Los Angeles (1931).

For aids in testing children's readiness for reading see: Metropolitan

Experience has also demonstrated that children with I.Q.'s of 55 and below rarely learn to read. From constant repetition a child of a lower level of ability may learn to recognize such specific word images as those appearing in familiar signs or the names of common objects, but the teacher should recognize that these children have no potential capacity for continuous meaningful reading. In certain cases where they are able to attain a fair reading vocabulary the comprehension element that makes effective reading possible is lacking.

The majority of pupils with I.Q.'s of about 55 to 65 may be expected to acquire some degree of reading ability, although for some at sixteen it may not exceed third-grade vocabulary and comprehension.

The majority of pupils with I.Q.'s of from 66 to 75, given the right guidance, can leave school at sixteen years with a fair degree of reading ability. For any pupils in this group who do not succeed in learning to read after repeated efforts of the teacher with different methods a special study should be made by the teacher, a psychologist, or reading specialist. The teacher can no longer be complacent about the child with an I.Q. above 66 who does not learn to read. Research is continually discovering ways of dealing with the special difficulties of children that should make it possible for every child above this level, where there are no other serious obstacles to learning, to attain a fair mastery of the tool of reading. The mentally retarded child, however, is not likely ever to attain a rate of reading rapid enough to make him a really effective reader. The distinction made by Dolch between "inaudible" and

“silent” reading suggests the possible limitations of the slow-learning as a reader. The tendency among mentally retarded children of voicing inaudibly the sounds represented in their reading tends to keep many of these children in the class described by Dolch as “inaudible” readers. It is doubtful if they will ever become really efficient “silent” readers. This idea suggests the need for the teacher to concentrate her efforts on developing comprehension at the child’s level rather than on attempting to increase his rate of speed beyond the point determined by careful study to be a reasonable standard for him.

*Reading stories built up from experiences.* Stories developed from the children’s own expressions about their experiences are invaluable in teaching that word symbols have meaning and that the written and printed form conveys thought. There is also a glow of satisfaction for the child in reading the story that is his own. But there is also the possibility that it may add nothing to his reading skill unless it is carefully planned and followed up. The teacher of younger children should check the vocabulary of “experience” stories with the Gates Primary Word List,<sup>1</sup> in order to make sure that she is weaving basic words into the reading stories that she and the children make together.

By careful checking she can also select the most common words and phrases for drill and mastery and dis-

<sup>1</sup> Every special-class teacher should be acquainted with Arthur J. Gates, *A Reading Vocabulary for the Primary Grades* (Bureau of Publications, Teachers College, Columbia University) as an aid in developing suitable reading lessons. This booklet gives a list of 1500 words that have been selected as suitable for use in all forms of reading material in grades one, two, and three. These words were selected from many sources, including children’s literature, readers, and the spoken vocabulary of young children. The selection of words is on the basis of their utility, interest, and degree of difficulty for children. They are worth-while words that children will easily learn and that they will be likely to encounter frequently.

regard the occasional and unusual word that may have been used because of its immediate interest. She should plan for repetition of the vocabulary that is new so that the child may not be merely exposed to new word images but may really acquire them. In addition to vocabulary the teacher should also think of the length and structure of sentences and of the likenesses and differences in word forms.

*Teaching word recognition.* Recent studies indicate that the development of skill in word recognition has been left too much to trial-and-error methods. Teachers have attempted to associate the sound and meaning of the word with its symbol without calling attention to its distinguishing characteristics. Gates found that words, in order to be recognized, must have some distinguishing feature for the child. Every child tested in his studies was found to have some well-defined habits that guided him in recognizing word forms. These habits generally involved one or more of the following processes :

1. Recognizing a word by a minute clue ; i.e., *monkey* was remembered by the "two wavy things," *m* and *n*; the "hole," *o*; the "funny chair," *k*; "the monkey tail," *y*.
2. Recognizing a word by general configuration, length, and shape.
3. Recognizing a word by identification and naming of single letters (spelling). This method was rarely used.
4. Recognizing a word (*a*) by means of the phonetic translation of separate letters, (*b*) by means of phonetic translation of phonograms or smaller combinations of sounds, (*c*) by means of larger phonograms and syllables.

5. Recognizing a word by means of visual analysis without sounding of word parts.
6. Recognizing a word by means of context clues.

Gates concluded that no single method was adequate but that good readers tended to use all of them, depending on the particular need.

Perhaps our failure to teach some of the mentally retarded to read is due to the fact that we have thought of reading as a matter of word-form and phrase-form memorization and have not aided the child in acquiring skill in the differentiation and recognition of words. Children must be definitely taught to look for differences and likenesses in words and to find context clues to their meaning.

*Phonics.* In the last analysis, combinations of letters and their sounds are the distinguishing features of words. The child accordingly needs some ability to combine and sound letters if he is to be an independent reader. This ability involves the necessity for some training in phonics.

Briefly stated, recent research suggests three principles of phonic teaching that apply to slow children as well as to the normal.

1. Common phonetic elements are to be introduced only when they appear in words in the child's reading vocabulary. The common element is to be noted when the child comes on the second or third word containing that element; i.e., the child knows *call* and *ball*; when *fall* appears, he compares it with *call* and *ball* and recognizes the common sound.<sup>1</sup>

<sup>1</sup> As a sufficient reading vocabulary is acquired, certain phonograms, like *ed*, *ing*, *ly*, *er*, *est*, *re*, *un*, that are commonly used as suffixes and prefixes should be introduced.

2. It is better to associate the vowel sound with the consonant preceding it than with the consonant following, as in the English language syllable division is after the vowel rather than before it. For example: *can* should be *ca-n* rather than as *c-an*. Also separating *c-an* requires the insertion of an extraneous vowel in pronouncing *kuh-an*.
3. Separate phonic drills in which long lists of familiar and of common sounds are repeated have little value. Such drills place emphasis on the mechanical side of word recognition and do not transfer readily to the recognition of words in a reading context. Devices that naturally throw into relief common phonetic elements and the teacher's calling of attention in various ways to these elements lead to better results.

Some plan of phonic teaching is as essential for the slow child as for the normal child. The mentally retarded, however, cannot be expected to use phonics independently to the extent that the normal child will use them, and he will have to be given more help in their application.

*Comprehension.* The teacher needs to be constantly watchful of the comprehension element in reading. This caution is especially necessary in providing reading exercises that the child carries out by himself. Gates discusses in this connection the value of what he calls the "intrinsic device."<sup>1</sup>

An intrinsic device is one which is not separate or supplementary but an integral part of the natural process of reading. It consists of a type of organization of a reading situation which guides or impels the pupil to react in a

<sup>1</sup> Arthur I. Gates, *The Improvement of Reading*, pages 27-29 (The Macmillan Company, New York; 1927).

desired way while his efforts are directed to accurate interpretation and normal enjoyment of the content. . . .

The pupil reads a series of directions which tell how to color an outline drawing; e.g.,

Color the cat blue.

Color the hat black.

Color the coat brown.

After reading a short story the pupils solve such comprehension problems as the following:

Who got most of the milk?    the rat  
   the cat  
   the bat

How did the little girl feel?    She felt sad.  
   She was mad.  
   She was glad.

These exercises are not separated from useful reading work since they constitute a very helpful means of increasing comprehension. They also add to the enjoyment of reading and stimulate a desirable attitude toward it. It is merely the arrangement of the task that forces the child to distinguish carefully between similar words and throws into relief the common elements. The teaching of word perception is intrinsic.

The intrinsic device fills an important need for the mentally retarded child because he is apt to become engrossed with mere form and mechanics and forget meaning. He especially needs the type of exercise that requires thought.

*Repetition and quantity of reading.* A mistake commonly made in teaching slow children is the failure to provide enough repetition of word forms and enough reading material at an easy level. The slow child needs more repetition than does the normal child of new word forms that are to be fixed in his mind. The reading book, other things being equal, which introduces the fewest new words per page and provides most



frequent repetition of the words used is best for the slow child. In addition to work with the reading book, the teacher should plan supplementary reading material for the individual pupil and class work that uses the same vocabulary again and again. The majority of mentally retarded children would profit from stopping at the completion of each third of their primer and reading the corresponding thirds of two other primers with the same approximate vocabulary. This practice would build a sure foundational vocabulary and prevent the frequent "swamping" that comes when the child cannot assimilate the new word forms that have been given him and must depend on the teacher to supply them to him as he reads. This method of following up the work on sections of the so-called basal text might be carried out all the way through work with the third reader. There has been a tendency to keep mentally retarded children at reading that was too hard for them, and this tendency has discouraged the most efficient progress in reading. If more reading were to be provided at each level of accomplishment, surer word recognition would be developed and resulting ease in reading. One real difficulty in the way of carrying out this plan at each level has been the shortage of reading material suited to the child's social age. A way out of this difficulty is for teachers to co-operate in preparing suitable material.

*Reading for enjoyment.* Reading today is enjoyed by increasing numbers of people. As travel, the radio, and the movies increasingly widen interests, people find more and more in books to interest them. Books too are increasingly attractive. Books suitable for and appealing to children of all ages, from nursery-school age on, are being produced in great numbers.

Slow-learning children in both their school and out-

side experiences sense a need for reading. Ability to read is recognized by many children and adults as one measure of success in life. The special-class child who carries to and from school many books because he wishes to be like his normal brothers and sisters suggests the important estimate put on books and reading in the thinking of even the slow child. Parents too are likely to be sensitive to the fact that a child does not read. It is accordingly the school's obligation to encourage and to develop in the many who can reach this goal sufficient reading ability to read independently for enjoyment. Such facility will, however, not be attainable for all special-class children.

There are many ways of stimulating an interest in books. Any or all the following experiences are bound to lead to growth in interest: frequent listening to readings from well-chosen, attractive books that suggest the spontaneity and joy to be derived from reading; making books that include stories, illustrations, and tables of contents; easy access to an attractively arranged book corner or reading table, or to a library arranged and managed by the children; making regular trips to the library; consulting well-planned book lists with suggestions or captions to direct choices; recording in a book catalogue or scrapbook interesting things about books read. The teacher who acquaints herself with current literature for children cannot fail to become enthusiastic about the pleasure that books can afford to her pupils. Children's librarians employed in the public libraries are delighted to aid both teacher and children in the selection of suitable books.

The books listed at the end of this chapter have been found suitable in content and physical make-up for the mentally retarded and the dull-normal. They are classified under headings that suggest to the teacher

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how they may be used. The teacher may find it helpful to use these titles as guides in preparing lists suited to her own particular group.

*Testing reading ability.* Standardized tests may be used as an aid in determining the relation of the special-class child's reading ability to standards for the normal child. They may also be used as a measure of improvement from year to year. Standardized tests will of necessity be chosen for their fitness to the ability of the group and of the individual to be tested. The following tests have been found satisfactory with special classes :

FOR AGES 8 TO 12 YEARS		
FOR GRADES		
1-2	Detroit Reading Test I	World Book Company <sup>1</sup>
1	Detroit Word Recognition Test	World Book Company
	Gates Primary Reading Tests <sup>2</sup>	Bureau of Publications
1-2	Type 1. Word Recognition	
1-2	Type 2. Word, Phrase, and Sentence Reading	
1-2	Type 3. Reading and Directions	
1-8	Gray Oral Reading Test	Public School Publishing Company
1-8	Gray Standardized Oral Reading Check Tests	Public School Publishing Company
1-3	Los Angeles Primary Reading Test, Sigma	Southern California School Book Depository
1-3	Haggerty Reading Examination, Sigma 1	World Book Company
1-3	Metropolitan Achievement Tests — Primary Reading <sup>3</sup>	World Book Company
1-3	Williams Primary Reading Test	Public School Publishing Company

<sup>1</sup> Addresses of publishers of tests: World Book Company, Yonkers-on-Hudson, New York; Bureau of Publications, Teachers College, Columbia University, New York; Educational Test Bureau, Inc., University and Fifteenth Streets, Minneapolis, Minnesota; Public School Publishing Company, Bloomington, Illinois; Southern California School Book Depository, 1027 North Highland Avenue, Hollywood, California.

<sup>2</sup> The Manual of Directions for these tests gives excellent suggestions for diagnosis and remedial instruction.

<sup>3</sup> The Supervisor's Manual for these tests gives detailed suggestions for diagnosis and remedial work.

FOR  
GRADES

FOR AGES 12 TO 16 YEARS

3-6	Detroit Reading Tests II and III	World Book Company
3-8	Gates Silent Reading Tests	Bureau of Publications
	Type A. Reading to Appreciate General Significance	
	Type B. Reading to Predict the Outcome of Given Events	
	Type C. Reading to Understand Precise Directions	
	Type D. Reading to Note Details	
4-9	Iowa Silent Reading Tests — Ele- mentary	World Book Company
4-6	Haggerty Reading Examination, Sigma 3	World Book Company
3-8	Metropolitan Achievement Tests — Advanced Reading Test <sup>3</sup>	World Book Company
3-9	New Stanford Reading Test	World Book Company
2-12	Thorndike-McCall Reading Scale	Bureau of Publications

The teacher will find that interest in reading will be stimulated if from time to time she also makes use of informal tests to check the children's progress. The following attainments are suggestive of types of tests that may readily be devised by the teacher for use with children at various age levels:

*For ages 10 to 12 years*

1. Reads independently, with a considerable degree of accuracy, a thought unit containing six well-constructed sentences involving familiar vocabulary of second-grade difficulty. The thought unit used in testing should not exactly duplicate material previously read.
2. Answers three out of four written questions on the content of the thought unit.
3. Shows accuracy in word recognition in reading selection. Ten errors for every forty words should be considered reasonable accuracy.

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*For ages 13 to 15 years*

1. Reads independently, with considerable accuracy, a story. This story should be chosen because it contains a familiar vocabulary of the proper degree of difficulty for this age group. It should not have been previously read by the child.
2. After reading the selection silently, the child does one of the three following things:
  - (a) Answers correctly, without reading orally, four out of five written questions.
  - (b) Answers seven out of ten completion statements.
  - (c) Answers ten out of twelve true-false statements.
3. Asks two questions pertaining to the story read. Simple questions of fact are satisfactory for this test.
4. Reads the selection orally to show accuracy in word recognition. Twenty errors for every one hundred words is considered reasonable accuracy.

The teacher may give letter ratings — A, B, C, or D — to performance; or number ratings, allowing 1 or 2 for each correct response. Any score that is objective evidence to the child of his success is adequate. The value of such testing to the teacher lies in helping her to determine the individual progress made and the places where she needs to review and supplement her teaching.

Mentally retarded children should be tested not only on the forms of reading commonly tested, but also on the type of reading for which the school purposes to train them specifically, such as sign reading, newspaper reading, and so on. Following are excerpts from tests designed for this purpose:

## READING SIGNS

## PRACTICE SAMPLE

Put a cross (X) on the sign that tells you to be careful :

## Give more

## Dangerous

## Fresh eggs

1. Put a cross (X) on the sign for a public park:

## Fire escape

## Keep off the grass

## Keep out

2. Put a cross (X) on the sign for an empty house:

## For rent

## Railroad crossing

## Wet paint

3. Put a cross (X) on the sign for a railroad crossing:

**Private**

**Do not touch**

## Stop. Look. Listen.

## NEWSPAPER READING

(Each child has a copy of a newspaper)

## PRACTICE SAMPLE

From your newspaper cut out the answers to the following questions and paste:

## What does the paper cost?

Paste here ( )  
( )

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From your newspaper cut out the answers to the following questions and paste:

1. What is the day and date on this paper?  
*Paste here* ( )  
( )
2. What is the weather report?  
*Paste here* ( )  
( )
3. Choose the name of the funny in this paper that you like best.  
*Paste here* ( )  
( )
4. Find a grocery ad. Cut out the names of four things sold in a grocery store.  
*Paste here* ( )  
( )  
( )  
( )
6. Find an ad under "Help Wanted — Female."  
*Paste here* ( )  
( )
8. Find a short item of Rochester news.  
*Paste here* ( )  
( )

### ENGLISH

The ability to use language as an accurate expression of ideas and feelings is an art. It is no mean accomplishment, and studies have shown that it correlates highly with intelligence. In the description in Chapter II of the development of mentally retarded children at different age levels, slow development of language ability was revealed as a noticeable characteristic of the slow-learning. Given the best of environments and the best teaching guidance, the mentally retarded child will be backward in his language development. But it has been demonstrated that the school can aid his language

development if attention is directed specifically to the function of language in life situations generally. Teachers of mentally retarded as well as those of normal children have not secured the best possible results in their English teaching because in many instances they have taught formal, stilted speech patterns that the child could not use in his everyday conversation. They have spent time on careful arrangements of words, formal answers to questions, a set form of telling stories and delivering speeches, and so on, giving little heed to the fact that most oral language is spontaneous conversation used to convey thought, exchange ideas, explain ways or means, or verify rumors. Teachers have also been disastrously pedantic about speech errors. The English period has too often been a time when the child developed a fear of expressing himself naturally. His whole effort was to learn to speak as the teacher would have him.

There are only a few situations in which the mentally retarded child needs to be directed in the use of oral language. These are in conversation and group discussion; in giving simple explanations and directions; in telling stories or relating incidents; in preparation for some such special occasion as a class program or dramatization.

Needs for written language are still fewer. They may perhaps all be summed up as needs for filling out forms and for writing letters and possibly an occasional telegram or newspaper advertisement.<sup>1</sup> Schoolroom experience that provides for real growth in language must include opportunity for meeting these needs in a natural, free way.

<sup>1</sup> This is not a necessary ability, as clerks will render this service for the individual if the request is stated.



*English development in real situations.* Descriptions of units in the foregoing chapters suggest the many opportunities for English teaching and English practice in natural settings. Growth in English expression depends on growth in concepts and ideas and on opportunity to express these concepts and ideas orally. Vocabulary and sentence forms grow as the child finds himself in situations where he has need for using new terms and for making himself understood. Where the teacher plans her program to include trips, examination of actualities, plenty of pictures, and material for construction and illustration,<sup>1</sup> and allows the children to talk about possible plans, to express their ideas about undertakings, to tell what they saw on a trip, to explain how and why they have made something, there is plenty of opportunity for conversation and other forms of verbal expression. In situations calling for conversation, the teacher must learn to wait for the children's ideas and accept each expression that represents honest effort. If she forces expression before there is a real impulse for it on the part of the children, and if she accepts and approves only what measures up to her standards, the children lose interest and become discouraged in their efforts.<sup>2</sup> The giving of simple explanations and directions will also enter into conversation periods. Situations in which the group can express themselves in conversation with one another and with the teacher should be as frequent as, if not more so than, periods for story telling and report giving.

*Increasing the speaking vocabulary.* The experiences in a properly directed unit program will continually call

<sup>1</sup> See discussion on pages 222-232 of the three types of experiences to be provided for.

<sup>2</sup> See references on page 368 for the development of conversation periods.

for new words. The teacher should keep in mind that the mentally retarded child must hear these new words associated with object or action repeatedly and then have the need for using them in their own expression. Vocabulary lists are helpful in reminding the teacher of the words she should use in her conversation with the pupils and in encouraging the pupils to use these same words as they express themselves. Vocabulary lists giving a variety of words to express the same meaning are also helpful. In making lists, the teacher should guard against the use of technical and abstract words, as mentally retarded pupils have not the capacity to learn to use them with ease.

*Good usage.* Good English usage comes only through a consciousness of error, a desire to improve, and opportunity for practice. In a unit program the teacher has ample opportunity for noting awkward expressions and errors. She must guard, however, against calling attention to errors and making the child conspicuous in a period when she is trying to secure spontaneous expression of thought. The teacher can, however, call attention to good usage in her own conversation and in other children's and so secure group and individual interest for improvement, working specifically toward the correction of certain outstanding errors and encouraging the child to watch for and correct his own errors insofar as possible.<sup>1</sup>

*Letter writing.* There is evidence in the accounts of units given in preceding chapters that many experiences

<sup>1</sup> Along with the need for good English usage goes the need for clear articulation and enunciation. Faulty speech habits are more prevalent and persistent in the slow-learning than in the normal group (see pages 21 to 26). The teacher should have recourse to a good reference book on the subject, such as *The Correction of Speech Defects*, by Helen Peppard (The Macmillan Company, New York; 1925). Where a speech defect is serious, advice should be had from a specialist.

in the modern classroom will call for meaningful letter writing. Even the very young children may feel a need for copying invitations and requests. Later the making of the co-operative letter, and finally independent letter writing, will come to fill important needs in the life of the classroom.

A basis for skill in letter writing is laid in practice in oral expression, the writing of simple statements, later the writing of paragraphs to convey interesting information, and gradual acquaintance with letter form. Too much co-operative story or letter writing or copying is inclined to make the child dependent on others in his expression. The child with even the most meager spelling ability should be encouraged to write some statements of his own. Help can be given him with the spelling. Pupils with third-grade spelling ability and above should compose all their own stories and letters.

*Testing.* The informal English test developed by the teacher to test the specific written usages for which the group is working is probably more satisfactory than the standardized English test, which covers too wide a range of skills for the majority of special-class children. A few of the simpler tests, however, are suggested for possible use with the more capable.

FOR  
GRADES

4-8	Metropolitan Achievement Tests — English	World Book Company <sup>1</sup>
4-9	Iowa Elementary Language Tests	Educational Test Bureau
3-12	Wilson Language Error Test	World Book Company
4-8	New Stanford Language Usage Test	World Book Company

#### SPELLING

Spelling should be thought of as a necessary aid to written English and not as a separate subject. The daily memorization of lists of words has generally no

<sup>1</sup> For addresses see page 346.

carry-over to the situations where spelling is needed. The real challenge to learning to spell is, What words do I need to know how to spell in order to carry on my work? or, How often can I make use of the words I am learning to spell? Real needs for spelling will arise in connection with listing games learned, writing information and stories, formulating rules for conduct in certain situations, writing letters, directions, etc.

Spelling should not be taught until the child has some foundation of reading experience. For the majority of special-class pupils, other things being equal, spelling should be incidental up to the chronological age of nine and a half or ten years. Deliberate attempts at mastery should not begin until this age or later. If the pupil acquires five to seven new words a week from the time he is nine or ten until he is sixteen years old, he will at sixteen have an approximate spelling vocabulary of 1400 to 1600 words, the average expectation for the normal nine- or ten-year-old.<sup>1</sup>

A basic vocabulary<sup>2</sup> of most frequently used words should be supplemented by other words the children commonly require in their written work. The teacher, however, needs to be on her guard against teaching the unusual word that the child needs only for a special occasion or a current activity.<sup>3</sup>

<sup>1</sup> Local studies made in Rochester, New York, indicate that the correlation between spelling ability and I.Q., though positive, is low. Some pupils at the higher I.Q. levels show poor accomplishment and pupils at the lower I.Q. levels exceed expectations.

<sup>2</sup> See page 183 for statement of vocabulary used in Rochester.

<sup>3</sup> Out of 175 words chosen as samplings from spelling vocabularies used in units on food and shelter, 161 appeared in the Thorndike list and were located as follows: 1 to 2000, 36 per cent; 2000 to 4000, 22 per cent; 4000 to 10,000, 34 per cent. Estimated from this sampling, a third or more of these words were unsuitable for spelling words. The teacher is advised to check to see that all "interest" or "unit" words appear on some reliable spelling list, either that used by the regular grade or on some scientifically constructed published list.

Spelling method requires attention to the fact that spelling involves motor activity and the child must attend closely to writing the words he learns. Following is an outline of helps to the cultivation of sound spelling habits.

1. Look at the word and say it distinctly by syllables.
2. Spell it by syllables.
3. Close the eyes and try to see each syllable as you say it.
4. Open the eyes to see if it is right.
5. If not, pronounce it in syllables. Spell it letter by letter. Try again.
6. When right, write the word.
7. Look again to see if you have it right.
8. Write the word three times without once copying from yourself.

With children of thirteen years and older, the spelling words to be studied during the week should be tested on Monday so that each child may concentrate on his own failures during the week. Individual study should follow. The child should then be checked again on Wednesday, and finally on Friday, individual study always being concentrated on the needs as revealed in the tests. The keeping of individual spelling lists of words to be learned is recommended.

The following spelling scales are suggested:

FOR  
GRADES

- |     |  |                                 |
|-----|--|---------------------------------|
| 2-8 | Morrison-McCall Spelling Scale (a booklet containing eight spelling lists of fifty words each, so chosen from the Ayres Scale of 10,000 words as to be of uniform difficulty and composed of words ranging progressively from easy to difficult) | World Book Company <sup>1</sup> |
|-----|--|---------------------------------|

- |     |                                 |                                  |
|-----|---------------------------------|----------------------------------|
| 2-8 | Iowa Spelling Scales (Ashbaugh) | Public School Publishing Company |
|-----|---------------------------------|----------------------------------|

<sup>1</sup> For addresses see page 346.

Spelling tests are also included in the following batteries of tests, the words and sentences to be dictated being included in the teacher's manuals :

FOR  
GRADES

2-8	Metropolitan Achievement Test	World Book Company
2-8	New Stanford Achievement Test	World Book Company

WRITING

Writing, like spelling, is a skill needed in written English and should be treated as such. The incentive for neat, legible writing should come from the needs the child recognizes — tagging his possessions with his name, sending an invitation, writing a letter, and so on.

No one system of writing can be recommended as better than another for the mentally retarded. As studies of handwriting indicate that the majority of persons use a combination of arm and finger movements, it is safe to assume that this fact should be recognized in teaching this group. In the early stages of learning to write, as the child is first becoming acquainted with the forms of letters, very careful plans for practice of words and letters are necessary.

Quality of writing<sup>1</sup> is significant at all age and ability levels, but speed is unimportant. The greatest gain to the child probably comes through his being helped to diagnose his own writing weaknesses and to work for improvement. Some simple instructions that might help him to attain writing ability are suggested :

1. Watch the height of letters above the base line.
2. Keep letter formation uniform ; i.e., make all *o*'s and *a*'s round and closed, keep slant of letters on downward and upward strokes parallel.

<sup>1</sup> A quality rated as 80 in the Ayres Scale (Russell Sage Foundation, New York) is recommended. This will allow for some falling away from standard.

3. Keep all letters resting on the base line.
4. Space letters, words, and lines uniformly.
5. Maintain a good position.

Manuscript writing has been introduced from England into many of our schools. It has certain advantages for the slow child — ease of learning, early legibility, its likeness to the printed page, and the satisfaction it brings to the young writer. Marjorie Wise<sup>1</sup> says that any teaching method that applies to the teaching of a running hand can also be used in teaching this form of writing. She explains, however, the need for the teacher who would undertake the teaching of manuscript writing to become thoroughly conversant with the form, with studies relating to its use, and with methods of teaching it. Teachers should not substitute it for cursive writing without study and investigation.

Children enjoy using writing scales to judge improvement in their writing. The teacher will find that it is a good plan to post writing scales to which the child can frequently refer. The following are suggested:

FOR  
GRADES

3-8	Ayres Measuring Scale for Handwriting: Gettysburg Edition	Russell Sage Foundation, 130 East Twenty-Second Street, New York
3-8	Metropolitan Achievement Test — Primary Handwriting Scale (cursive and manuscript)	World Book Company, Yonkers-on-Hudson, New York
3-6	Freeman Handwriting Measuring Scale	Zaner Bloser Company, Columbus, Ohio
	Conrad Manuscript Writing Standards	Bureau of Publications, Teachers College, Columbia University, New York
1-4	Pencil Form	
3-6	Pen Form	
	West Chart for Diagnosing Handwriting	Public School Publishing Company, Bloomington, Illinois

<sup>1</sup> See Marjorie Wise's *On the Technique of Manuscript Writing*, reference on page 369.

# NUMBER

The teaching of number is seen to present a special challenge when one considers the amount of time the mentally retarded spends on this subject from the primary grades on. How can number be made more meaningful to him? How can hour upon hour of fruitless effort at abstract number be eliminated? Some improvement will undoubtedly be made when it is recognized that the child usually begins number, as he does reading, before he is ready. Ideally number concepts should be only incidental or applied to actual situations for the slow-learning group to the age of nine or ten years.

*Making arithmetic practical.* In the discussion on page 65 of objectives for number study, the social usage of arithmetic was emphasized. Numerous specific instances of such needs for the fundamental skills are frequently occurring. The alert teacher makes the child aware of the relationships to these situations of the number skills he is learning. He is, for example, made aware that spending two cents a day for milk means that in a week he spends five two-centses, or ten cents — that  $2¢ + 2¢ + 2¢ + 2¢ + 2¢ = 10¢$ . He learns that when eight girls and nine boys are present, there are  $\frac{8}{17}$  or  $\frac{9}{17}$  pupils all together. The girl knows that “my new dress” takes two and a half yards of cloth. The cloth costs fifty cents a yard.  $2 \times 50¢ = \$1.00$ .  $\frac{1}{2}$  of  $50¢ = 25¢$ .  $\$1.00 + 25¢ = \$1.25$ .

Many teachers are content to keep the child adding and subtracting, and multiplying and dividing, while simple number relationships like the foregoing go by unnoticed. The result is often that the child can add long columns and subtract numbers to the millions



place. But to what purpose? In such units as those described in the preceding chapters there are frequent illustrations of number application in meaningful situations. There is no justification for any teacher's spending time on the teaching of number skills if the child does not have and does not see that he has need for their use. The administration of the Stanford arithmetic tests over a period of four years in special classes of adolescents in Rochester resulted in as high scores in reasoning as in computation, indication that these boys and girls had learned to apply the arithmetic skills they were able to master.

Thoughtful provision must be made for problem solving with special-class children. Plenty of such simple verbal problems as those encountered in everyday situations should be put to the child to answer orally. Data in the form of real price lists, measurements, and scores should be put in the child's hands, to be used by him as the basis for original problems. He should be given encouragement to state and to solve such problems. Written problems to be presented to the child should be stated directly, kept within his reading vocabulary, and be true to current number facts in life situations.

*Basic number facts and skills.* Studies by Thorndike, Osburn, Knight, and others, have demonstrated the fact that computation in arithmetic is made up of large numbers of specific facts and skills. Knowledge of the forty-five combinations is sometimes thought of as constituting ability to add. But analysis indicates that there are one hundred facts in simple addition when the zero and reverse facts are counted. Similarly in column addition, subtraction, multiplication, and division, the basic number facts to be taught are greater than is usually recognized.

The teacher of the mentally retarded should make sure that the child masters each of these facts and skills when he first encounters it. She should guard against taking the child on to the next difficulty before he is ready for it. Too often he is given too many new facts and skills to master at one time, and as a result he learns none of them sufficiently well to be confident and independent in his responses.

The teacher should use diagnostic tests in order to detect individual pupil weaknesses in specific facts and skills. On the basis of these she will determine the child's number needs and plan his work.<sup>1</sup> Modern arithmetic texts<sup>2</sup> abound in short timed tests that furnish check-ups for review and for new facts and processes.

*Motivation of the mechanical facts and processes.* The dull apathy with which the mentally retarded child goes at the too common indefinite assignment of just "more examples to work" and turns in a paper full of errors is indication aplenty that there are few positive learnings or improvements from such a situation. The arithmetic period should be to the child a time when, for instance, he has a definite number of examples in column addition to add and check, or when he is given addition examples specifically involving zeros in columns and works toward a definite standard of accomplishment. A record of the score on each assignment is kept and each succeeding arithmetic assignment is dependent on the result of the former. The slow child must not only have a purpose and be ready for what he is attempting, but he must be aware of his progress<sup>3</sup> or arithmetic becomes dull, mechanical repetition that

<sup>1</sup> See list of references on the teaching of number on page 369.

<sup>2</sup> See list of arithmetic texts on page 370.

<sup>3</sup> See suggestions for record keeping on pages 241-245.

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promises only chance improvement or failure. Instructional tests, which are tests and teaching devices combined, are helpful in motivating achievement.<sup>1</sup> Work planned for the individual child on the basis of the results of testing will have real meaning for the child.

*Testing number.* Reference has been made to the use of tests for discovering difficulties, for planning new work, and for motivating achievement in the fundamentals. Standardized tests also serve to compare the status of the slow-learning child with that of the normal and indicate individual improvement over an interval of a year or more. The teacher, however, should be guarded in her use of these tests; overuse of them may obscure the practical everyday applications of number, which is the all-important concern of number work with the slow-learning.

The following tests are recommended for use in special classes. The individual situation and need will determine the selection.

### DIAGNOSTIC TESTS

#### FOR GRADES

3-5	Brueckner Diagnostic Tests in Whole Numbers	Educational Test Bureau <sup>2</sup>
2-6	Compass Diagnostic Tests in Arithmetic, I through VI	Scott, Foresman & Co.
2-6	Wisconsin Inventory Tests, I through VIII	Public School Publishing Company
1-6	Buswell-John Diagnostic Chart for Individual Differences in Fundamental Processes	Public School Publishing Company

<sup>1</sup> See page 363 for a list of such tests.

<sup>2</sup> Addresses: Educational Test Bureau, University and Fifteenth Streets, Minneapolis, Minnesota; Scott, Foresman & Co., New York; World Book Company, Yonkers-on-Hudson, New York; Public School Publishing Company, Bloomington, Illinois.

### INSTRUCTIONAL TESTS

FOR GRADES	(These are tests and teaching devices combined.)		
Pri- mary	Clark-Otis-Hatton Tests in Arithmetic for Begin- ners	Instructional	World Book Company
4-8	Courtis Standard Practice Tests in Arithmetic		World Book Company
5-6	Schorling-Clark-Potter Instructional Tests in Arithmetic		World Book Company
2-6	Sangren-Reidy Instructional Tests in Arithmetic		Public School Publishing Company

### ACHIEVEMENT TESTS

3-8	Public School Achievement Tests in Arithmetic Computation and Reasoning	Public School Publishing Company
	Metropolitan Achievement Tests —	World Book Company
1-3	Primary Arithmetic	
4-9	Advanced Arithmetic	
2-9	New Stanford Arithmetic Test	World Book Company

*Units of measure.* Quantity, amount, size, space, distance, time — what do these mean to mentally retarded children? A child may glibly recite about pints, quarts, bushels, pounds, tons, feet, yards, miles, and so forth, and still have no known points of reference for these terms. Has he experienced these measures in concrete situations, so that by constant association and comparison he knows what is represented by the facts he deals with? Does he know about how much bulk a ton of coal represents? Has he seen the wagon or measured the bin that holds a ton? Has he seen the school bin which holds ten tons? Does he think of this as ten times as big as the one-ton bin? How high is the school building or the flagpole? Can the pupil look at other buildings and compare their height with that of the school building? Is the concept of twenty feet for the child so clearly identified with the size of his room that he can think of a ship sixty feet long as three times

as long as the schoolroom, or the house forty feet long as twice the length of the room? What familiar place or building represents to him a space one hundred feet long — what playground or park or apartment house, for example? What is his concept of a mile? Has he walked a mile enough times so that it is a vivid experience to him? Has he paced it off? Has he measured the time it takes to walk it?

Concepts of units of measure cannot be applied by all mentally retarded children, but much can be accomplished in this direction with many if the development of these concepts is not made purely a matter of verbalistic or chance acquirement. If there were specific teaching toward the development of such concepts and their meaningful application, beginning with actual measurement of small quantities of material and later, at nine or ten years mental age, extending to interpretation of experience with larger quantities, many mentally retarded children could gain satisfactory ability in interpreting the world of quantity, space, and distance.

#### SUMMARY

There is still room for study and experimentation to determine what degree of mastery of the tool subjects can reasonably be expected from the mentally retarded and how much of this will be of practical value to them. It is certain, however, that our attempts to satisfy the slow-learning child with a semblance of academic learning have been responsible for much teaching that is little more than meaningless and useless repetition of mechanical skills, an exercise that proves of no value outside the classroom.

QUESTIONS AND SUGGESTIONS FOR STUDY

1. Suppose your special class is building a toy store. Suggest a series of five reading lessons that might be developed for the primer group. List first the principles that will govern you in planning the lessons.
2. John, age 14-0, I.Q. 68, is a baseball enthusiast. The teacher begins to make a reader about baseball for John. He is not interested. What may be the reasons?
3. Study Chapter IV in Dolch's *The Psychology and Teaching of Reading*. What are your conclusions concerning the place of phonics in the education of the mentally retarded?
4. State your understanding of the "intrinsic" device in reading. Compare its value with that of the "extrinsic" device.
5. Choose a story from a first reader of any of the series listed. Study the suggestions given in the manual for developing it with a class. Plan five "intrinsic" exercises to aid in word recognition.
6. List as many specific life situations using language as you can think of that the mentally retarded will meet, such as conversing over the telephone, introducing a guest, etc.
7. Review the discussion of "experiences" on pages 222-232. Discuss briefly how each type contributes to the development of ability in English.
8. What proportion of the school week do you think should be given to oral and to written English with mentally retarded children aged eight to ten years? fourteen to sixteen years? Give reasons for your answers.
9. The average child at eight years has a speaking vocabulary, a spelling vocabulary, a reading vocabulary. What is the usual order of their development up to this point? their comparative size?
10. Which is more important in spelling study, oral or written spelling? Why?
11. Set up standards for judging spelling curriculums and spelling methods.

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12. Discuss the practice of having the children use spelling words in oral sentences; in written sentences.
13. What advice and explanation would you give to the teacher who asks the child to write ten times every word he is to learn to spell?
14. Suggest motives and materials for introducing writing to the mentally retarded child of nine years of age.
15. Make a plan to aid mentally retarded pupils fourteen and fifteen years of age in improving their handwriting.
16. Under what conditions may continued repetition in computation fail to produce any improvement?
17. Study Chapters II and IV of Brueckner's *Diagnostic and Remedial Teaching in Arithmetic*. Make a plan for diagnosing the difficulties of your pupils in some arithmetical process. Make a plan for remedial teaching.
18. List twenty real situations in school life where number functions.
19. Skim Chapter XI and make a list of the number situations that are mentioned as occurring in the units described. Discuss their significance for teaching and for learning.
20. Make a list of materials the teacher and children might collect or make without cost that would aid in teaching number.
21. (a) What would you say of a situation where a group of children could add and subtract fractions with two-figure denominators in the abstract, but could not tell how much ribbon to buy if one piece a half yard and another one and a quarter yards long were needed?  
(b) What would you say of a situation where a class was working problems based on comparisons of distances of near-by towns from their home town, but they did not know the approximate location of the mile point from their school?
22. The reader will note that reading and arithmetic texts but no English or spelling texts have been listed in the bibliography following this chapter. Discuss reasons why this may have been.

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*The First Friends*  
*On Our Farm*  
*Birds*  
*Forest Friends*  
*Trains and Ships*  
*Little Housekeepers*  
*To the City*

Harter Publishing Company, Cleveland, Ohio

*Kitchen Fun*  
*Cinderella*  
*The Daily Dozen*

The Whitman Publishing Company, New York

*Book of Airplanes*  
*Wild Flowers We Know*  
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## *Chapter Seventeen*

### THE ADJUSTMENT OF THE MENTALLY RETARDED TO THE COMMUNITY

THE development of an adequate educational program to meet the needs of the mentally retarded has been considered in the preceding chapters. There also have been briefly indicated<sup>1</sup> the kinds of adjustments the slow-learning typically make to life in the community, and desirable goals for a school program have been suggested to the end that these adjustments may be made increasingly satisfactory. The school program, however, will fall far short of its goals if supervision of the mentally retarded is not continued beyond the compulsory school age until he is satisfactorily adjusted to life in the community.

The education of no child ceases when he leaves school, although the school may too often have considered its responsibilities ended at this point. Education is a continuous process. When the child leaves the classroom, experience continues to be his teacher. The extent of his growth depends on his ability to learn from the new experiences that face him. But the amount of learning the mentally retarded will gain from such experiences depends to a large extent on the guidance he is given in meeting and interpreting specific situations. Much of this help must accordingly be given him as he comes face to face with the new situations of after-school life.

Some sort of program designed to facilitate after-school adjustments of the handicapped may well be the responsibility of the community or the state, since these

<sup>1</sup> See pages 50-58.

persons are all too likely to become the dependents of the community if they are not helped to become self-supporting and law-abiding. For several reasons the school, a public-supported institution, is the agency best fitted to assume the responsibility for after-school adjustments of the mentally retarded. In providing a special program for their education, the school has made a special study of the individual in relation to his capacity, his environment, and his needs. It accordingly has an intimate understanding of the problems of this group that may well be utilized as the basis for a program designed to facilitate their adjustments to out-of-school life. Then too the school has made a definite attempt to capitalize the limited abilities and assets of the mentally retarded so as to develop their aptitudes for vocational and social life, but this effort will be largely wasted if the individual does not find in his out-of-school life outlets for those aptitudes developed by the school. If its program is to realize its fullest possible effectiveness, the school should continue the individual's education to the point where he has achieved some degree of ability to function as a contributing member of his home and community.

#### THE PURPOSE OF A PLAN OF FOLLOW-UP

Investigators in the field of delinquency and criminality<sup>1</sup> vary in their estimates of the numbers of individuals of subnormal mentality included in the groups of delinquents and criminals. The most conservative estimates are that from 10 to 15 per cent of the total number of delinquents are mentally retarded. The schools should assume the responsibility for the reduc-

<sup>1</sup> N. Scheidemann, *Psychology of Exceptional Children*, pages 447-457 (Houghton Mifflin Company, Boston; 1931).

tion of the numbers of these retarded individuals who develop delinquent tendencies.

One of the fields of endeavor that promises rich returns as a preventive measure is that of vocational guidance and follow-up. The committee on the Socially Handicapped of the White House Conference on Child Health and Protection<sup>1</sup> has made recognition of this fact in recommending "vocational guidance and placement bureaus" as one of the seven means with which the school should meet the problems of delinquency.

The mentally retarded child leaves school unable to compete on equal terms with normals. The sphere of industry in which he can engage is limited. He has not the same capacity as they for making adaptations. He cannot adjust himself to jobs calling for so many and so varied operations as can the normal; he cannot meet new situations requiring independent judgment and foresight; and he is more liable than the normal to be disturbed by the personal reactions of his working superiors and associates. He will be more dependent for his success in life, as has already been noted, than will the normal on certain favorable factors — suitability of job, attitude of employer, good health, favorable personality traits, influence of home, and good habits for work and free time. It is an important part of the responsibility of the school to see that all of these factors are as favorable as possible to the individual.

That many mentally retarded pupils do achieve a certain degree of success in work of a semiskilled nature has been shown by such studies of after-school careers of special-class pupils as those reported in Chapter V. That slow-learning individuals may not only be success-

<sup>1</sup> White House Conference Reports, *The Delinquent Child*, page 124 (D. Appleton-Century Company, Inc., New York; 1932).

ful but also highly desirable for certain factory jobs requiring routine hand or machine operations is also shown by experience. It is more than barely possible that in certain types of jobs the slow-learning may even prove themselves more reliable than workers of higher intelligence.<sup>1</sup> The superior mentality of the latter may tend to interfere with persistent, uniform output of product in the case of monotonous routine work. The school might do much to facilitate the economic adjustments of its slow-learning pupils by helping prospective employers to recognize this fact and so create a demand for their services.

The school should continue its supervision over the mentally retarded youth until he is satisfactorily settled in whatever vocational life may be open to him. A follow-up worker should be available for perhaps two years or longer after the individual has left school to help him find his job; to understand its requirements; to establish satisfactory relations with his employer, his fellow-workers, and his home; to aid him to use his free time profitably; and to lead him to appreciate the values of maintaining good health, steady employment, and good conduct. The follow-up worker should also help the individual to profit from the educational values in life experiences and thereby help him to become satisfactorily adjusted and independent.

State legislatures have enacted laws and have spent considerable sums in organizing and maintaining special educational opportunities for the mentally retarded. But they have not met the conditions that make these programs ineffective for many individuals when they try to face difficult problems in life unguided. It is

<sup>1</sup> See, for instance, Arthur S. Otis, "The Selection of Mill Workers by Mental Tests," *Journal of Applied Psychology*, Vol. IV, No. 4 (December 1920), pages 339-342.

accordingly reasonable to hope that states may come to subsidize bureaus of follow-up as well as special classes in local communities to take care of this group. There is here an opportunity for them to contribute more fully than they have as yet done to the development of the mentally handicapped citizen and to his satisfactory adjustment to society.

The United States Children's Bureau called attention to this need in the conclusions developed from their study of employment :<sup>1</sup>

The need for the development of a system of placement and supervision for pupils from special classes is indicated by the fact that only 5 per cent of the individuals in the present study had had any help from the school or from placement offices in getting work for which they were fitted or in which any special ability that they might have had could be utilized.

Several local communities, realizing the importance of this work, have appointed workers to the task.<sup>2</sup> Reference has previously been made to the field study carried out in Massachusetts,<sup>3</sup> as a result of which recommendations were presented to the state legislature for social and vocational guidance of the mentally retarded to the age of twenty-one.

#### SUGGESTIONS FOR A PLAN

The success of follow-up service designed to facilitate adjustments of the mentally retarded to industry presupposes a very close relationship among the school personnel, the follow-up worker, the community, and

<sup>1</sup> Alice Channing, *Employment of Mentally Deficient Boys and Girls*, Children's Bureau Publication No. 210 (Superintendent of Documents, Washington, D. C.; 1932).

<sup>2</sup> Cincinnati, Detroit, San Francisco, and Los Angeles are among the number.

<sup>3</sup> See page 55.

industry. While the general purpose of the service will be to place the pupil as he leaves school in a job suited to his ability and to guide his adjustment to that job, there are many elements in the process that must be understood. From these develop the need for many specific steps that will contribute to the accomplishment of the general purpose. These can be only very briefly stated here.

Follow-up workers must of course be chosen with a background of general and vocational education, and an understanding of vocational guidance. They also should have had some experience in industry. They should then be ready to develop such a program of work as is suggested in the following outline :

1. Make a survey of local industries with a view to determining those that offer suitable jobs. Make an analysis of each job.
2. Assist supervisor and teachers in building a vocational guidance program
  - (a) to acquaint pupils with suitable openings in local industries.
  - (b) to develop interests, qualities, and skills needed.
3. Develop understanding and co-operation on the part of employers toward the mentally retarded group and their employment.
4. Become acquainted with the pupil through records, through interviews with the teacher, and through personal interviews.
5. Co-ordinate the individual's work at the continuation school<sup>1</sup> with his job.

<sup>1</sup> The continuation school, which usually enrolls pupils for about four hours a week for a year following regular school attendance with the purpose of carrying on educational work related to the child's vocational interests, should provide the first help in adjusting the child to his job. There is, however, need for greater articulation between the regular school and the continuation school if this help is to be effectively provided.

6. Develop with employers a plan for the registration of jobs and the selection of candidates for them.
7. Develop a plan for systematic supervision of pupils in industry, which will include attention to health and personality.
8. Organize an efficient system of records.

The home-room teacher in the school may contribute very considerably to the success of this program in certain definite ways :

1. Develop in pupils attitudes, interests, and abilities that will carry over into industry.
2. Gain a broader knowledge of occupational opportunities in the community.
3. Place at the disposal of the follow-up worker all the pertinent information about pupils. Co-operate in interviews. Make home visits with a view to helping find employment for pupils.
4. Make visits to the continuation school with pupils during their last year in school.

The extent and organization of any particular plan of follow-up will depend on the size of the community and the number of persons available to carry it on. The suggestions just outlined refer to the major problem of vocational adjustment with which guidance programs have in the past been largely concerned. Because of the growing tendency toward shortened hours of labor, it is becoming increasingly desirable that any plan of follow-up should include more than attention to the individual's adjustment to industry. It should include, wherever needed, social supervision to aid the individual in his home adjustments and in the use of his free time. A program so inclusive would of course entail more contacts and planning than would one that concerned itself only with the matter of employment in



industry. The provision for recreational outlets and the budgeting of free time may embrace the greater need in the immediate future.

#### SUMMARY

A school program for the education of the mentally retarded is not complete without some provision for follow-up after the period of schooling. Intelligent help in meeting the conditions of after-school life is extremely important for the mentally retarded child. For various reasons the school seems the proper institution to give this help. If it is to accept fully its responsibility for the preparation of this group for life in the community and for their satisfactory adjustments to this life, it must continue its program beyond the period of schooling. Through an organized plan of follow-up help should be given these pupils in the establishment of vocational, recreational, and social adjustments. Meeting the responsibility of guidance in these adjustments is but the first step in a complete educational program that takes account of the specific needs of a handicapped group. These needs are summarized and well defined in the following recommendations made by the White House Conference for all children handicapped mentally or physically:<sup>1</sup>

Early discovery and diagnosis which will determine the nature and extent of the handicapped.

Curative and remedial treatment which will enable the handicapped child to function, physically and mentally, as normally as possible.

Social contacts of the handicapped child with both normal and other handicapped persons which will instill in

<sup>1</sup> *Addresses and Abstracts of Committee Reports*, edited by Katherine Glover and Winifred Mason, page 318 (D. Appleton-Century Company, Inc., New York; 1931).

the handicapped child self-confidence, good morale, and a spirit of independence.

A differentiation of educational methods and procedures to provide the special kind of education required by the handicapped child's special needs.

Educational and vocational guidance and training which will discover the handicapped child's general abilities and aptitudes, interpret his vocational significance, and secure for him that type of general education and vocational training through which his vocational objectives may be achieved.

Placement in employment which will afford the handicapped child suitable and remunerative employment opportunities.

Follow-up in employment to continue until the child is reasonably adjusted to his employment and environment.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. State and discuss four probable reasons why so few communities have established follow-up service.
2. Make a study of five special-class pupils who have been out of school two years. Consider health, type of job, length of employment, wages, means of securing job, and employer's estimate. Examine their previous school records. List probable causes for successes and failures.
3. Make a similar comparative study of two normal boys and two special-class boys of the same ages, all having left school at the same time.
4. List a series of five principles to guide the teacher of adolescents in preparing a boy to make better adjustments in his after-school career.
5. List all the industrial and personal-service jobs in your community that offer opportunities (a) for the special-class boy, (b) for the special-class girl.
6. Study the reference below to Dye and Unger's "A Technique for Job Analysis," and then outline a form on which to record analyses of jobs suitable for the mentally retarded.

7. Discuss the White House Conference recommendations that have a bearing on follow-up service for the mentally retarded.

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**PART THREE**

**THE BORDERLINE AND THE DULL-NORMAL  
CHILD**

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## Chapter Eighteen

### THE EDUCATION OF THE BORDERLINE AND THE DULL-NORMAL

THE school has an obligation to provide not only for the most seriously handicapped of the slow-learning — those identified in this book as the “mentally retarded” — but also for that larger group of slow-learning who are here termed borderline, or dull-normal. These pupils are very roughly indicated as those having intelligence quotients of from about 70 or 75 to 89, as determined by performance on intelligence tests.

There is the same need for understanding the potential abilities of this dull-normal child, his slow rate of development, and his methods of learning, as there is for understanding the mentally retarded. Such pupils are numerically important; they comprise approximately 15 to 18 per cent of the total school population. Studies of behavior problems, of truants, and of juvenile delinquents also indicate that this group is a serious problem to society. These studies reveal that in addition to the number of offenders who are mentally retarded, a still larger number of delinquents come from the borderline and dull-normal group and that school failure has been directly related to their maladjustments.<sup>1</sup>

It has already been suggested that a definite line of demarcation between the mentally retarded and the dull-normal on the basis of intelligence quotients cannot be utilized in developing an educational program. Case studies<sup>2</sup> indicate that factors other than intelli-

<sup>1</sup> John Slawson, *The Delinquent Boy*, page 163 (Gorham Press, Boston; 1926).

<sup>2</sup> See pages 52 and 53.

gence are strongly operative in the school experience of the slow-learning, and that differing degrees of school success in the individuals comprising the two groups are the result of these several factors. Both groups have in common the general characteristics and needs typical of all slow-learners. The same basic educational principles and methods already developed in terms of the mentally retarded are therefore generally applicable to the dull-normal.

The two groups may, however, be roughly differentiated on the basis of learning ability. The dull-normal in general have greater capacity for learning than have the mentally retarded, for whom such special programs as those considered in the first part of this book have been made. This fact gives rise to certain conditions that it may be helpful to consider here.

A program designed for the mentally retarded does not provide opportunity for the fullest possible growth of these less seriously handicapped of the slow-learning group. On the other hand these children are incapable of meeting the demands of a program designed for children of average capacity. Failure, nonpromotion, misbehavior, and early withdrawal from school characterize the careers of many of them in the regular school organization. Here they are placed in situations they are not capable of meeting adequately and as a natural consequence often become first indifferent and then actively rebellious. These children thus become as much of a problem as the mentally retarded to the teacher who is expected to bring children of all levels of mental ability in one group to the same standards of accomplishment.

If these more capable of the slow-learning group are to be given the opportunity for fullest possible growth and success, it is accordingly important that some specific plan for their education be developed.

POTENTIALITIES OF THE DULL-NORMAL CHILD

What are the potentialities of the dull-normal child for learning in school and for realizing success in after-school life?

It is probable that the child with an I.Q. of 80 will have ability as suggested in the following outline :

CHRONOLOGICAL AGE	MENTAL AGE	APPROXIMATE GRADE-LEVEL ABILITY	APPROXIMATE COMPARABLE GRADE-LEVEL ABILITY OF NORMAL CHILD
6-0	4-10	Kdg.	1st
6-6	5-3		
7-0	5-7		2d
7-6	6-0	1st	
8-0	6-5		3d
8-6	6-10	2d	
9-0	7-2		4th
9-6	7-7		
10-0	8-0	3d	5th
10-6	8-5		
11-0	8-10		6th
11-6	9-3	4th	
12-0	9-7		7th
12-6	10-0	5th	
13-0	10-5		8th
13-6	10-10	6th	
14-0	11-3		High School — 1
14-6	11-8		
15-0	12-0	7th	High School — 2
15-6	12-5		
16-0	12-10	8th. Capacity for semiskilled and skilled labor, for personal and domestic services, for clerking, etc.	High School — 3

Children in the borderline and dull-normal group with I.Q.'s above or below 80 will have, other things being equal, proportionately greater or less capacity.

There are certain generally well-defined characteristics of the slow child, besides his mental level at any



age and his slow rate of development, that must be considered in planning for his education.

1. In physical development he is like the normal. His interest may not be so wide or so varied, but he can readily take his place in games with the normal group and learn to conform to group codes.
2. He is interested in the constructive and "doing" side of experience and profits by this form of expression.
3. His language development is slower than that of the normal. He forms fewer associations and forms them more slowly. Word meanings and vocabulary development come more slowly and only through actual experience.
4. His rote memory is better than his associative and logical memory.
5. He does not so readily discriminate differences or recognize similarities as does the normal child. His abilities to do these things are developed by repeatedly directing him to observe and to make comparisons.
6. His ability to form judgments, to generalize, and to understand abstractions is limited. He is led to generalize only through being helped to appreciate the application of general principles to a large number of specific instances.
7. He is limited in the powers of independence, initiative, and resourcefulness, and requires more direction and more frequent opportunity than does the normal child to plan and to carry out activities within his ability.
8. He is slower in detecting and correcting his own errors than is the normal child and needs more specific guidance if he is to profit from experience.

Our schools are planned for children with a capacity for academic achievement. The intelligence tests that we commonly use as a basis for planning individual school programs have been rightly accused of testing only academic aptitude. They give a prognosis of how the child will succeed in academic work. But there is need for recognizing aptitudes other than academic — mechanical aptitude, art aptitude, and others — if the educational program is to help the child attain his fullest possible development. This fact is especially applicable to the slow group, whose greatest potentialities will not be along academic lines.

It is not uncommon to find boys like the one who fails in the classroom but is able to go into the shop and adjust or repair any machine without direction. A principal of a continuation school recently reported two borderline boys, one of whom could solder to amazing nicety, another who had an exceptionally true eye for mechanical construction. These boys are receiving specialized courses and will undoubtedly outdo the average workman in their attainments. Another dull-normal boy, after being out of school four years, was earning a yearly salary of ten thousand dollars as a designer for a large clothing firm. In other words, individuals who are rated as borderline and dull-normal on the basis of intelligence tests and academic achievement are not necessarily below average in mechanical or art or other specialized abilities. There is need for recognizing all such aptitudes. To be sure all slow children will not be found to possess them, but there are undoubtedly more who do than the school at present is geared to discover. Adequate provision to discover and develop such individual abilities is a desirable and necessary phase of the education of the dull-normal.

## CLASSIFICATION TO PROVIDE FOR THE DULL-NORMAL

The widespread use of intelligence and achievement tests during the last decade has emphasized the differences in the mental and educational status of individuals within school grades and class groups. Many progressive systems as a result have developed a plan for study, testing, and organizing so-called "homogeneous" groups to bring together pupils who have about the same learning capacity.<sup>1</sup> Such groups are commonly designated as X groups, for those below average; Y groups, for the average; and Z groups, for those above average. The purpose of the grouping is to allow children to work according to their ability and thereby eliminate insofar as possible failure and repetition of grades for the slow-learner and give added opportunities for the superior.

In systems using this type of pupil classification entering first-grade children are examined by group intelligence tests.<sup>2</sup> Individual children whose reactions are doubtful on the group tests are checked by an individual test, such as the Stanford revision of the Binet. Test results are not considered as conclusive evidence of ability, but they do give a rough prognosis of ability to attempt first-grade work. Insofar as possible the test results are considered together with

<sup>1</sup> Detroit, Los Angeles, Oakland, Berkeley, California, Baltimore, and Rochester were among the number that experimented early in this field.

<sup>2</sup> Group intelligence tests that are recommended for use with young children are suggested:

Detroit Kindergarten Test, Form A (Individual)

Detroit First Grade Intelligence Test, Form A

Pintner-Cunningham Primary Mental Test

All published by World Book Company, Yonkers-on-Hudson, New York.

Lee-Clark Reading Readiness Test. Southern California School Book Depository, 1027 North Highland Avenue, Hollywood.

health records and observations of physiological, social, and emotional maturity in determining the needs and capacities of the children. Where children have attended kindergarten, teachers' observations are also available for study. The kindergarten usually provides a differentiated program for the mature and the less mature groups, and the teacher is consequently prepared to rate her children in physical and social development and in learning ability as average or above or below average and as ready for first-grade work or in need of further "experience" preparation.

On the basis, therefore, of health records, test records, and teachers' estimates, recommendations concerning the rating of first-grade candidates and the progress that may be expected from them may be made as follows: "superior," more than average progress; "average," average progress; "below average," slower than average progress.

The "below average" group, comprising about 20 per cent of all first-grade candidates who are not ready to begin reading, are then recommended for a transition, or pre-primary, group. This group is usually made up of children who have socially, physically, and chronologically outgrown the kindergarten curriculum. It may also include those who are physically or socially immature or who lack the background of experience necessary to undertake first-grade work. The chief purpose of the program of this pre-primary group is to enrich experience and to increase the child's capacity for understanding his environment. It enables the child to continue investigative and constructive activities with varied materials and to enjoy group activities — stories, music, games, excursions — thereby enlarging his experiences, interests, and vocabulary. There is definite preparation for first-grade activities

through provision of freedom for self-expression and opportunity for the development of observations, ideas, interests, vocabulary, that will serve as a background and incentive for reading. The slow child who is thus prepared for his first-grade work and allowed to start it only when he is ready for it, starts off with the seriousness of his handicap minimized.

Pursuant to the policy that the child should progress in school without failure or repetition, the school has two alternatives when the child enters the first grade — one, to provide a slowed-up program that allows him extra time in the elementary school to complete minimum essentials for entrance to junior high school; second, provision for progress over six years, the average period of elementary schooling, and for promotion to junior high school on the basis of lowered requirements. In either case there is an adaptation of the curriculum.

The outline on page 397 roughly indicates these two plans.

In the first plan, which provides for a “slow-moving group,” the school, by keeping these children in the elementary grades for an extra long period, attempts to hold them up to certain standards comprising the minimum essentials of regular grade work. At the time of their promotion to the junior high school these children have then covered the minimum essentials of the material of the elementary curriculum. According to the second plan the pupils progress as far as they are able each year and then are sent on to the next grade if they are considered to have expended a proper amount of effort to succeed, even though they have not mastered the minimum essentials for the grade. By this plan the eight-year-old enters second grade — it might better be termed the second-year class — even though he may still be working to master a first-grade

CHRONOLOGICAL AGE	PLAN I	PLAN II
	SLOW-MOVING	ANNUAL PROMOTION
6-0 6-6	Pre-primary	Pre-primary
7-0 7-6	1B 1B	First year
8-0 8-6	1A 2B	Second year
9-0 9-6	2A 3B	Third year
10-0 10-6	3B 3A	Fourth year
11-0 11-6	4B 4A	Fifth year
12-0 12-6	5B 5B	Sixth year
13-0 13-6	5A 6B	Enters junior high Course II for slow group, beginning ap- proximately minimum fifth- or sixth-grade essentials, or their equivalent.
14-0 14-6	6A Enters junior high Course II for slow group, beginning min- imum essentials for 7B.	

reading vocabulary. By the first plan he might take three terms for his first-grade work but then would be ready for beginning second-grade reading when he

entered second grade. The purpose of either plan is to enable the child to experience the association of ideas and word symbols slowly and surely by a thorough, careful process, so that he does not become confused and engulfed in his attempt to master the printed page.

The first plan has the advantages of holding children and teachers up to definite standards of accomplishment and, in schools where grade and promotion standards are emphasized in the school régime, of making the slow child more able to compete with the normal child with whom he will be associated in junior high school. On the other hand, this plan has the disadvantage of delaying for many socially and physically mature pupils the experiences of a junior high organization designed for children of their age. The second plan makes it possible for slow children to enter junior high school at more nearly the same age as the normal child — the age for which the program of this school is designed. With this plan, however, there is noticeable differentiation in accomplishment between the slow child and the normal child at junior high school entrance. The second plan also requires more careful teacher guidance, supervision, and testing if the child is to be helped to realize his fullest potentialities. Without such direction and with no set standards of expectation, there is danger of a spirit of *laissez faire* in the execution of the plan. With either plan of promotion the dull pupil in the junior high school usually requires an adapted program.

Any plan of classification should be kept flexible from the beginning so that changes and adjustments for the individual may be made as the need arises. There must always be a flexibility that allows for shifting to other groups at any time when conditions seem to warrant it. Amount of progress should be frequently

checked with the results on standardized tests<sup>1</sup> and with teachers' judgments to correct initial errors in diagnosis, to measure progress, and to aid in developing and revising teaching procedures. Where there are any discrepancies between teachers' judgments and results on these group tests, there should be individual child study. Most school systems using any plan of ability grouping also provide for a test survey of all entrants to junior high school as an aid to their classification in the junior high school.

For small schools and school systems where classification in groups of average, below-average, and above-average pupils is not possible, the below-average should be recognized as a distinct problem within the grade. They should learn at their own pace, be allowed to move along with their grade, having met the standards set for their level of ability, and begin each new term's work at the point where they left off at the end of the preceding term. In the intermediate grades where the degree of mastery of the tools of learning is inadequate for effective study of "content" subjects, it may be advisable to allow the child to remain for longer than a term in any one grade, providing that he has the oppor-

<sup>1</sup> Suggested tests for this purpose:

- Intelligence:** National Intelligence Tests  
Terman Group Test of Mental Ability  
Otis Self-Administering Tests of Mental Ability  
All published by World Book Company, Yonkers-on-Hudson, New York.  
Kuhlman-Anderson Test. Educational Test Bureau, Minneapolis, Minnesota.  
Detroit Alpha Intelligence Test for Grades 5 to 9.  
Board of Education, Detroit, Michigan.
- Achievement:** New Stanford Achievement Test  
Metropolitan Achievement Tests  
Both published by World Book Company, Yonkers-on-Hudson, New York.



tunity of once again continuing in the tool subjects from the point where he left off and does not just "repeat the grade." This plan will be especially effective in school systems where the teacher is allowed to carry her group all through the primary grades or the intermediate grades. She then comes to know her group thoroughly and is consequently able to help the individual progress at his own pace.

In the National Survey of Secondary Education, where findings are gathered from outstanding school systems in the country, an inquiry was made concerning provisions in the school program for individual differences.<sup>1</sup> This study is pertinent at this point because it indicates that much of the provision for individual differences concerns the slow-learning group in the junior high school. Among the multiplicity of arrangements disclosed by this study for meeting individual differences, the most common were plans for "homogeneous" grouping, for special classes, and for unit assignments.

Specific types of provision reported for individual differences were (1) variation in pupil load, (2) credit for out-of-school projects, (3) advisory and guidance programs, (4) psychological studies, and (5) scientific study of problem cases.

The report states that a plan of homogeneous grouping does not of course result in the forming of classes of individuals who are all alike even in any one respect, but it does reduce the hopeless heterogeneity that results from chance classification.

<sup>1</sup> For the preliminary report of this survey, see the March, 1932, Bulletin of the Department of Secondary School Principals, National Education Association, page 330. For a complete report see Roy O. Billet, *Provisions for Individual Differences — Marking and Promotions* (United States Office of Education, Bulletin 1932, No. 17).

Special classes are organized for those who deviate markedly from the normal. These may be special or opportunity classes for slow pupils, special classes for pupils failing in the academic subjects of their grade, adjustment classes, remedial classes, restoration classes, or special classes for the gifted. Special classes for the slow, however, are provided about nine times as often as are classes for the very bright.

The "unit assignment" was reported as the most frequently used device for providing for individual differences among pupils. The term "unit assignment" as used in this study and in secondary education generally defines any plan for a course or courses that allows the individual to pursue and complete an assignment independently and at his own rate. Some methods of procedure used in the carrying out of unit assignments were the problem method, differentiated assignments, the laboratory plan, the contract plan, the project method, the Morrison plan, the Dalton plan, and the Winnetka plan. One half to three fourths of the schools chosen for intensive study of the "unit assignment" plan provide for differentiation of content of study. There are three times as many modified courses in grades 7, 8, and 9 as in grades 10, 11, and 12, because of the fact that there are fewer pupils with I.Q.'s below 100 in the high grades than in the low ones. The study showed that the most common method of unit assignment was modification and differentiation of existing courses. More differentiation had been carried out in English, with mathematics ranking second, social studies third, and science fourth.

The report also indicates that the problem of caring for fast-increasing enrollments in the secondary school is a serious one that the school is still far from solving adequately. The importance of the slow-learning

group as a factor in this problem is indicated, and the suggestion made that proper provision for these pupils will contribute to its solution.

Local needs require different plans of classification of pupils and organization of the teaching program, but in general the principles that hold true for the mentally retarded are sound for the dull-normal group and may be used as a basis for planning a school program for them.

1. It is advisable to discover and provide for the slow-learner before habits caused by failure are established.
2. It is advisable to work toward "homogeneity" in group make-up so that the program of the group can be suited to the physical, mental, and social development of the individual, with possibilities for adjustment or promotion from group to group as the child shows development.
3. There is need to focus emphasis on the all-round development and progress of the individual for each year he attends school, rather than on his achievements in relation to normal standards for academic accomplishment.
4. There is need for a carefully articulated program suited to the slow child's potential abilities, academic and vocational, which will be progressive from school entrance to school withdrawal.
5. There is need for a program that will enable the child to work wholeheartedly toward definite standards and accomplishments from week to week and from term to term, and to realize his progress toward these.
6. There is need for individual child study and learning situations suited to the limited capacities of slow-learners.

CURRICULUM AND METHODS

The greatest problem for the administrator and teacher lies not in the classification and organization of groups but in the application to these of suitable curriculums and methods. The tendency in this regard has been to lengthen the time of learning and then to expect that provision of time for persistent repetition of experiences will make it possible for the slow child to realize the same minimum attainments as the average child. This procedure is inadequate because it does not take account of the fact that the slow-learning child needs specific education related directly to his needs.

The attainments of this group must be fewer than those of the average pupils; they must also in the majority of cases be realized at an earlier age than in the case of normal children, as these dull-normal children tend to leave school at a comparatively early age; and they must differ in some respects from the attainments set for children of greater mental ability. They must be more practical and must lay the basis for more specific leisure and vocational interests. Academic attainments designed as preparation for secondary school mathematics, for the study of a foreign language, for special courses in science and history, are unsuitable for this group. The attainments important for the dull group are those that lead to hygienic living; to practical interpretation of the work of the world and of family and community interests; to vocational skills; and to interests and habits for the satisfactory use of free time. Elementary, junior high, and senior high school programs must be differentiated for the slow-learning pupil to these ends.

Progressive school systems that are staffed to recognize individual differences and to classify and organize groups with relatively homogeneous learning ability are

still in the throes of formulating suitable objectives and suitable curriculums for the groups that are formed. In the typical elementary school an effort at the mastery of minimum essentials in the tool subjects is a major consideration.<sup>1</sup> Denver is the first system to have published courses of study for the slow-learner.<sup>2</sup> These courses are in reading and arithmetic. Suggestions are given in these concerning the capacities and psychological characteristics of the slow-learner, and recommendations are made for methods and materials.

In the junior high school provision for individual differences often takes the form of vocational courses, which provide for more hours in the shop, the industrial arts rooms, or the home economics laboratory than are given to the average learner. Courses related to these vocational interests or modified academic courses are provided.<sup>3</sup>

The following statements from the Rochester Tentative Syllabus for such a course for the dull children in junior high school give the premise on which a differentiated program has been developed there :

The pupils for whom Course II is designed comprise the lower fifth or fourth of an unselected group of pupils ranked on a basis of educational achievement and intelligence, exclusive of mentally retarded pupils who are educated in special classes. . . .

It should be understood that differentiation for these pupils is not essentially a quantitative but rather a qualita-

<sup>1</sup> See the reading references on page 413.

<sup>2</sup> Among other cities providing a differentiated program for the dull, Detroit has prepared individual instructional materials in the tool subjects that take into account age, grade placement, and mental rating of the pupil. They have also prepared a course of study in literature. Their most recently published courses of study in arithmetic and reading give suggestions of what to do for dull children. Los Angeles has prepared instructional material in reading, number, and English for slow pupils.

<sup>3</sup> For differentiated plans, see Roy O. Billet, *op. cit.*, pages 179-194.

tive one; not that these children could do all the work if they had more time, but rather that they need a different type of work as well as different methods of instruction. Even if the very slow could ever reach the end of the regular educational course, given time enough, the more important question remains as to whether that course is suited to prepare them for living on their own intelligence levels. It is not, therefore, a question of merely reducing the quantity of the standard educational content and procedure to meet a particular need, but rather a matter of different outlook.

General objectives of this course for the dull pupils are stated as follows :

Since Course II is designed for pupils who will take their places in the community without an extended school training, the general objectives may be expressed in terms of essential life.

1. Establishment of standards of conduct.
2. Understanding of the elements of community service.
3. Acquaintance with spheres of wholesome enjoyment leading to worthy use of leisure.
4. Establishment of standards of health and personal hygiene.
5. Early development of vocational potentialities.
6. Command of fundamentals so far as these are required by the activities of daily life.

The subjects covered in this course are an adaptation of the academic subjects given to the average child, and provision is made in it for extensive time to be spent in the shop, the industrial arts rooms, or the home economics laboratory.

Following are statements from an article reporting a secondary-school experiment in Baltimore for "those pupils who in spite of every effort are unable to master the standard curriculum."<sup>1</sup>

<sup>1</sup> E. J. Becker, "Taking Care of the Sub-Z Group," *Baltimore Bulletin of Education*, Vol. X, No. 5 (February 1932), pages 120-122.

The problem is fourfold :

1. To provide such pupils with an educational pabulum which they can digest and assimilate.
2. To subject them to methods which will remove from them the consciousness of failure and the tyranny of grades.
3. To fit them as far as they can be fitted for the business of living and of earning a livelihood.
4. To set a definite limit to their period of educational incubation, and to award a substitute for the diploma at the conclusion of that period. . . .

These conditions we have . . . attempted to meet in the Western High School this year by what we call a "certificate course," because it leads to a certificate instead of to a diploma. We think that we have gone beyond similar courses elsewhere in that we have broken away completely from existing curriculums and traditional methods of instruction. We have selected sympathetic and capable teachers to administer the work; we have given them freedom from the restriction of courses of study and syllabi and promotional requirements, and hold them responsible only for giving the group all it can take of a given subject in a way that will appeal and inspire. There are no "marks" in the traditional sense of the word, and the pupils are thus released from the fear of failure to attain the minimum passing grade or of falling below the achievement level of the group. All we require of them is regular attendance and a willingness to put forth their best effort. If they do this, they are marked "satisfactory" and are promoted to the next subject unit. . . . Just what should be the content of the course is still a matter of conjecture and experiment. As a starter, we are giving the pupils practical English and arithmetic, hygiene and physiology, office practice and typewriting, art, home economics, physical education, and music. Each semester's work constitutes a complete unit, as far as that is possible. Pupils who have passed through the regular tenth grade will take two years of the course to win their certificate; those who have passed the ninth grade, three years; . . . enroll-

ment is by invitation. Each applicant's record is carefully considered by the counselor. . . . Teachers' grades, test scores, I.Q.'s, and character ratings are the criteria applied in the selection of the membership of the group.

The statements quoted above suggest the efforts of school systems to develop curriculums suitable to their dull pupils. A careful scrutiny of these indicates, however, that they are concerned with remaking the traditional school program to suit the slow child rather than to build a new curriculum suited from the beginning to the child's needs as a growing personality and a participator in life situations.

In the field of curriculum and method, attention should be called to the fact that a curriculum made up of units of work like those described in earlier chapters of this book undoubtedly provides greater opportunity for individual development in group situations than does a subject-matter curriculum, since the emphasis in the development of units is put on individual growth and co-operative enterprise rather than on conformity. In such a program time is spent on group planning and executing of various activities rather than on mass teaching and recitation. As children participate in common purposes and work out activities together, they have a chance to make individual contributions according to their individual abilities. Under proper guidance each child, even the slowest, can make some contribution to the whole. Where a grade is made up of children of varying abilities a program organized around units of work rather than subject matter is especially valuable. It offers incentive for individual effort and reduces comparison of accomplishments of the dull and the above average. For example, strong incentive for reading is given the slow pupil who wants to find out how to make an Eskimo kayak for a boat exhibit. He



hunts through the geography book for a picture and looks on eagerly while the teacher or another boy helps him to read about it. Individual reading practice is also planned for him at his particular level. Contrast the incentives to reading in this situation with that provided in the group situation in which the pupil struggles with the story in his reader and senses the failure of his attainment in comparison with that of the other boy who can do "so well." From the descriptions in Chapters XI to XV of units carried out with classes of mentally retarded children there may be found evidence of diversity of pupil abilities within a class, of individual and group incentive, with varied types of participation resulting and some degree of success for all. These elements of incentive, participation, and success are conducive to the development of that self-confidence and general morale so much needed by the slow child.

There is a growing conviction that the participation in a unit program of children of varying abilities represents an accurately lifelike situation and that, wisely conducted, such a program makes possible maximum individual development for all the slow, the average, and the superior. When there has been more experimentation in the guidance of children in purposeful and interesting situations, more will be known concerning the possibilities of individual development for all children.

In the Denver courses of study<sup>1</sup> for the slow-learner the following statement on the unit, or "project," is made :

The project organization is well suited to the slow-learning child. Its success involves careful purposing, planning, exe-

<sup>1</sup> See *Courses of Study in Arithmetic and Reading for the Slow-Learning in Elementary School Grades One to Six* (Monograph No. 29), page 37 (Public Schools, Denver, Colorado; 1930).

cuting, and judging of both mental and manual activities. When these activities are developed through the manipulation of materials, they are especially suited to the nature of the slow-learning child who learns by doing. He must see the significance of the project in terms of his own interests or needs. . . . He will need more teacher guidance in the selection, in the interpretation, and in the application of reference material than the normal child.

Every child can contribute to the project because it is possible to find phases of the work suited to all levels of ability. Therefore, each child feels satisfaction over the fact that the class recognizes his contribution to the completed project.

Good learning is assured through the project method because of wide opportunities for the integration of several subjects around a core of vital interest. For the social studies, English, reading, arithmetic, and the practical arts, the project lends itself admirably to the needs of the slow-learning child. . . .

The fundamental premises in the development of curriculum and methods for the borderline and the dull-normal are essentially the same as those for the mentally retarded: the differentiation of abilities within a class, the setting up of attainments and activities suited to the learner's abilities, the planning of a curriculum around units that give opportunities for participation by individuals of different abilities, the provision of actual first-hand experiences and their direct, concrete application in actual living.

The differences in plans for the two groups should develop from the fact that a wider range and higher standards of accomplishments should be provided for the dull group than for the mentally retarded: the borderline and the dull-normal may be expected to become more independent readers, writers, and computers, to express themselves more readily, to make

more associations and to develop some degree of understanding in the realm of geographical and historical concepts; and in community life to develop a greater range in vocational skills and interests, to develop more leisure interests and to share more responsibility for safety, and for personal, family, and community health.

#### SPECIFIC SUGGESTIONS

For the individual teacher facing the challenge of a slow group or of slow-learning individuals within her normal group, the following suggestions, all of which are discussed in the foregoing chapters, are briefly stated:

1. Become acquainted with each child as a personality, with his family, his home, and his out-of-school interests. (See pages 129–135.)
2. See that insofar as possible all physical handicaps are removed so that the child is free to learn. (See pages 142–152.)
3. Help the child to be a part of the group through participation in group enterprises — in games, in story telling, dramatization, construction, housekeeping, etc. Discover what he can contribute, be it ever so little at first, and let him feel success in his efforts. (See pages 138–139.)
4. Make proper materials and tools easily accessible and provide time for construction activities, remembering that the child's purpose in and growth through his work are more important than the product.<sup>1</sup> (See pages 224, 231–232.)
5. Develop in the child an interest in and under-

<sup>1</sup> Children can be encouraged to gather crude materials for construction. See Martha P. Porter, *The Teacher in the New School*, pages 268–270 (World Book Company, Yonkers-on-Hudson, New York).

standing of his immediate environment before attempting to develop concepts that are remote to this environment. Develop habits of careful and accurate observation. (See pages 44-45, 224-230.)

6. Find out by testing what the child is able to do in respect to the tool subjects and analyze his difficulties. (See pages 346-348, 354, 356-358, 362-363.)
7. Plan instruction in the tool subjects that begins where the child is and builds up slowly and carefully from step to step. Provide for short spans of work and for practical application of what is learned. A little should be well mastered at each attempt and used with satisfaction instead of having the child exposed to too much, leading to confusion and discouragement. (See pages 334-364.)
8. Plan the daily program so that children of as nearly as possible similar ability can work as groups in reading, number, and spelling — both with the teacher and independently. (See pages 191-192, 249-256.)
9. Plan achievement records or charts so that the child will know for what he is working and can note his progress. (See pages 241-245.)

#### SUMMARY

The school is only at the threshold of its attempt to educate the borderline and dull-normal children. As social and industrial conditions force the school to continue education beyond the generally accepted school-age limit, the problem of providing adequately for this group confronts us more immediately than ever before. When the school comes to the full realization that un-

derstanding children is of prime importance and that subject matter is secondary, then, and only then, shall we help each child to realize his own potentialities rather than to struggle for impossible attainments set up by a system of education. Under such conditions the borderline and dull-normal will have an equal chance with others for successful achievement at their own level of ability in school and in life out of school. But until such time as there is general recognition of and provision for this group in all school systems, there is need and opportunity for the individual teacher to go far to meet their needs.

#### QUESTIONS AND SUGGESTIONS FOR STUDY

1. List all the advantages that may accrue from recognizing the dull-normal at an early age.
2. In classifying children for slow-moving groups, what are the advantages of having both teachers' estimates and test results?
3. Make a plan for keeping a record of individual children in a slow group that would help the teacher to determine each child's proper placement and progress.
4. At about what age are the majority of dull-normal children ready for reading?
5. If you were a teacher of a mixed third and fourth grade representing children of average, above-, and below-average learning ability, how would you plan the term's work?
6. List twelve of what you would consider the most important attainments to work for in a pre-primary group.
7. Skim Chapters XI to XV and list under topical headings the suggestions given there for curriculum and method that would apply equally well to slow-moving groups.
8. Why is there urgent need for recognizing the potentialities of the slow-learning child in planning an adequate curriculum?

9. What are the disadvantages of waiting until junior high school age to make a program for the slow child?

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